OPERATION MANUAL

MULTIQUIP®

MODEL SP2S20H
SELF-PROPELLED PROFESSIONAL PAVEMENT SAW
(HONDA GX630RTXF2 GASOLINE ENGINE)

Revision #1 (02/17/2012)

To find the latest revision of this publication, visit our website at: www.multiquip.com

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

PN: 35523

⚠ WARNING ⚠

CALIFORNIA — Proposition 65 Warning

Engine exhaust and some of its constituents, and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks.**
- **Cement and other masonry products.**
- **Arsenic and chromium from chemically treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: ALWAYS work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

⚠ WARNING

SILICOSIS WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow the respiratory precautions mentioned above.

⚠ WARNING

RESPIRATORY HAZARDS

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturers or suppliers, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the materials being used.

SP2S20H Pavement Saw

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NOTICE

Specifications are subject to change without notice.

Training Checklist			
No,	**Description**	**OK?**	**Date**
1	Read operation manual completely.		
2	Machine layout, location of components, checking of engine and hydraulic oil levels.		
3	Fuel system, refueling procedure.		
4	Operation of spray and lights.		
5	Operation of controls (machine not running).		
6	Safety controls, safety stop switch operation.		
7	Emergency stop procedures.		
8	Startup of machine, pre-heat, engine choke.		
9	Forward and reverse travel.		
10	Starting a cut.		
11	Pavement cutting techniques.		
12	Stopping a cut.		
13	Restart after stopping blade within work surface — explanation		
14	Shutdown of machine.		
15	Lifting of machine (lift loops).		
16	Machine transport and storage.		

DAILY PRE-OPERATION CHECKLIST

Daily Pre-Operation Checklist		✓	✓	✓	✓	✓	✓
1	Hardware and damage check						
2	Engine oil level						
3	Hydraulic oil level						
4	Condition of blade						
5	Safety stop switch operation						
6	Braking control operation						

Do not operate or service the equipment before reading the entire manual. Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.

SAFETY MESSAGES

The four safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator and are preceded by one of four words: **DANGER, WARNING, CAUTION** or **NOTICE.**

SAFETY SYMBOLS

DANGER

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY.**

WARNING

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY.**

CAUTION

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY.**

NOTICE

Addresses practices not related to personal injury.

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Rotating parts hazards
	Cutting and crushing hazards
	Hydraulic fluid hazards

GENERAL SAFETY

⚠ CAUTION

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.

- Avoid wearing jewelry or loose fitting clothes that may snag on the controls or moving parts as this can cause serious injury.
- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.

- **NEVER** operate this equipment under the influence of drugs or alcohol.

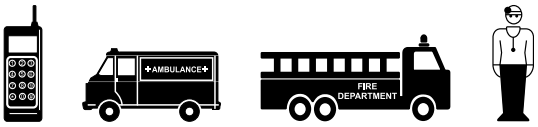
- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.
- No one other than the operator is to be in the working area when the equipment is in operation.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.

NOTICE

- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.
- **NEVER** use accessories or attachments that are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **ALWAYS** know the location of the nearest **fire extinguisher.**

- **ALWAYS** know the location of the nearest **first aid kit.**

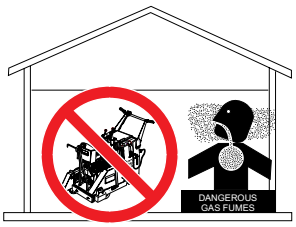
- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site.** Also, know the phone numbers of the nearest **ambulance, doctor** and **fire department.** This information will be invaluable in the case of an emergency.



SAW SAFETY

⚠ DANGER

- Engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.
- The engine of this equipment requires an adequate free flow of cooling air. **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.



- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death.**

⚠ WARNING

- If applicable, **NEVER** use your hand to find hydraulic leaks. Use a piece of wood or cardboard. Hydraulic fluid injected into the skin must be treated by a knowledgeable physician immediately or severe injury or death can occur.

- Accidental starting can cause severe injury or death. **ALWAYS** place the ON/OFF switch in the OFF position.

- **NEVER** disconnect any **emergency or safety devices.** These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.

⚠ CAUTION

- Anytime the saw is lifted onto its nose or tilted fully back, such as for maintenance access, the high end of the saw MUST be blocked up to prevent the possibility of crush injury.

NOTICE

- **ALWAYS** ensure saw is **securely** placed on appropriate blocks or jackstands when performing maintenance requires elevation of the saw.
- If saw has brakes, ensure brakes are applied when leaving or when using on a slope. Some saws utilize a brake system where the brakes are automatically applied when the engine is stopped.
- If saw has a parking brake, ensure that the parking brake is engaged and holds the saw safely in place when parking on a slope.. Turning the saw across the angle of the slope will help prevent accidental downhill movement.
- **ALWAYS** block the saw with appropriate blocks when leaving the saw parked on a slope.
- To prevent unexpected loss of control, **DO NOT** start engine on a sloping surface
- **DO NOT** use on excessive slopes or on extremely uneven surfaces
- **ALWAYS** start engine with the control handle in NEUTRAL position to prevent unexpected movement.
- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- Make sure there is no buildup of concrete, grease, oil or debris on the machine.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.

BLADE SAFETY

⚠ WARNING

- Rotating blade can cut and crush. **ALWAYS** keep hands and feet clear while operating the saw.

⚠ CAUTION

- **NEVER** operate the saw without blade guards and covers in place. Exposure of the diamond blade must not exceed 180 degrees.

- Verify the engine start switch is set to the OFF position before installing a blade.
- **ALWAYS** inspect blade before each use. The blade should exhibit no cracks, dings, or flaws in the steel centered core and/or rim. Center (arbor) hole must be undamaged and true.

NOTICE

- Use proper blades and follow blade manufacturer's recommendations. Match the blade RPM (blade shaft RPM) to the recommended blade surface feet per minute (SFPM).
- Ensure the blade-mounting bolt is tightened to 125-175 foot lbs. of torque.
- **ALWAYS** examine blade flanges for damage and excessive wear.
- Ensure the blade is marked with an operating speed greater than the spindle speed of the saw.
- Only cut the material that is specified for the diamond blade. Read the specification of the diamond blade to ensure the proper tool has been matched to the material being cut.
- If wet cutting, ensure a **WET CUTTING** blade is being used and that the water supply system to the blade is properly functioning and being used.
- **DO NOT** drop the diamond blade on ground or surface.
- Ensure that the blade is mounted for proper operating direction.
- Adhere to the blade manufacturer's recommendations on handling, storage and safe usage of blades.

ENGINE SAFETY

⚠ WARNING

- **DO NOT** place hands or fingers inside engine compartment when engine is running.

- **NEVER** operate the engine with heat shields or guards removed.
- Keep fingers, hands hair and clothing away from all moving parts to prevent injury.

- **ALWAYS** shut down the engine before performing service or maintenance.
- **DO NOT** remove the engine oil drain plug while the engine is hot. Hot oil will gush out of the oil tank and severely scald any persons in the general area of the saw.

⚠ CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.

- Make certain the operator knows how to and is capable of turning the engine OFF in case of an emergency.

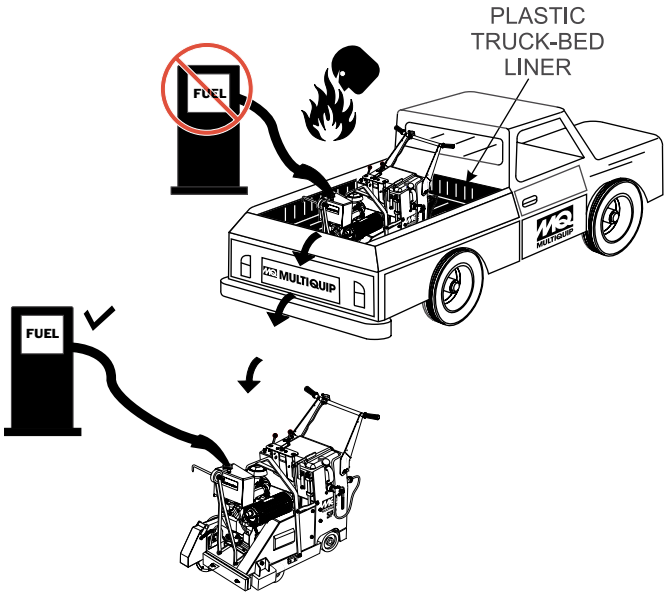
NOTICE

- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating in speed ranges above the maximum allowable.

FUEL SAFETY

DANGER

- **DO NOT** add fuel to equipment if it is placed inside truck bed with plastic liner. Possibility exists of explosion or fire due to static electricity



- **DO NOT** start the engine near spilled fuel or combustible fluids. Fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with **flammable** liquids.
- **DO NOT** fill the fuel tank while the engine is running or hot.
- **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system.
- Store fuel in appropriate containers, in well-ventilated areas and away from sparks and flames.
- **NEVER** use fuel as a cleaning agent.
- **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.

BATTERY SAFETY (ELECTRIC START ONLY)

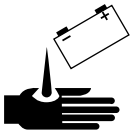
DANGER

- **DO NOT** drop the battery. There is a possibility that the battery will explode.
- **DO NOT** expose the battery to open flames, sparks, cigarettes, etc. The battery contains combustible gases and liquids. If these gases and liquids come into contact with a flame or spark, an explosion could occur.

WARNING

- **ALWAYS** wear safety glasses when handling the battery to avoid eye irritation. The battery contains acids that can cause injury to the eyes and skin.

- Use well-insulated gloves when picking up the battery.
- **ALWAYS** keep the battery charged. If the battery is not charged, combustible gas will build up.
- **DO NOT** charge battery if frozen. Battery can explode. When frozen, warm the battery to at least 61°F (16°C).
- **ALWAYS** recharge the battery in a well-ventilated environment to avoid the risk of a dangerous concentration of combustible gases.
- If the battery liquid (dilute sulfuric acid) comes into contact with **clothing or skin**, rinse skin or clothing immediately with plenty of water.



- If the battery liquid (dilute sulfuric acid) comes into contact with **eyes**, rinse eyes immediately with plenty of water and contact the nearest doctor or hospital to seek medical attention.

CAUTION

- **ALWAYS** disconnect the **NEGATIVE battery terminal** before performing service on the equipment.
- **ALWAYS** keep battery cables in good working condition. Repair or replace all worn cables.

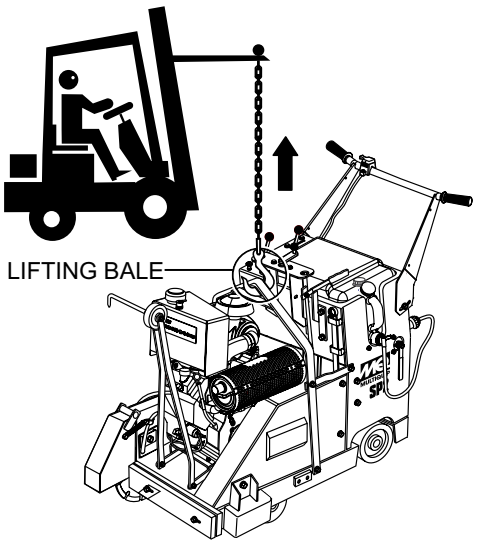
LIFTING SAFETY

⚠ CAUTION

- **NEVER** allow any person or animal to stand underneath the equipment while lifting.
- Some saws are very heavy and awkward to move around. Use proper heavy lifting procedures.
- **DO NOT** attempt to lift the saw by the guards, handle bars or front pointers.

NOTICE

- The easiest way to lift the saw is to utilize the lifting bale. A strap or chain can be attached to the lifting bale, allowing a forklift or crane to lift the saw up onto and off of a slab of concrete. The strap or chain should have a minimum of 2,000 pounds (1,000 kg) lifting capacity and the lifting gear must be capable of lifting at least this amount.
- Before lifting, make sure that the lifting bale is not damaged.
- Use one point suspension hook and lift straight upwards.



- **NEVER** tip the engine to extreme angles during lifting as it may cause oil to gravitate into the cylinder head, making the engine start difficult.
- Always make sure crane or lifting device has been properly secured to the lifting bale.
- **DO NOT** lift machine to unnecessary heights.
- **NEVER** lift the equipment while the engine is running.
- **ALWAYS** use ramps capable of supporting the weight of the saw and the operator to load and unload the saw.

TRANSPORTING SAFETY

NOTICE

- **ALWAYS** shutdown engine before transporting.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- **ALWAYS** tie down equipment during transport by securing the equipment with rope.
- Ensure that the diamond blade does not come into contact with the ground or surface during transportation.
- **NEVER** transport the saw to or from the job site with the blade mounted.

ENVIRONMENTAL SAFETY/DECOMMISSIONING

NOTICE

Decommissioning is a controlled process used to safely retire a piece of equipment that is no longer serviceable. If the equipment poses an unacceptable and unrepairable safety risk due to wear or damage or is no longer cost effective to maintain (beyond life-cycle reliability) and is to be decommissioned (demolition and dismantlement),be sure to follow rules below.

- **DO NOT** pour waste or oil directly onto the ground, down a drain or into any water source.
- Contact your country's Department of Public Works or recycling agency in your area and arrange for proper disposal of any electrical components, waste or oil associated with this equipment.

- When the life cycle of this equipment is over, remove battery and bring to appropriate facility for lead reclamation. Use safety precautions when handling batteries that contain sulfuric acid.
- When the life cycle of this equipment is over, it is recommended that the trowel frame and all other metal parts be sent to a recycling center.

  Metal recycling involves the collection of metal from discarded products and its transformation into raw materials to use in manufacturing a new product.

  Recyclers and manufacturers alike promote the process of recycling metal. Using a metal recycling center promotes energy cost savings.

EMISSIONS INFORMATION

NOTICE

The gasoline engine used in this equipment has been designed to reduce harmful levels of carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx) contained in gasoline exhaust emissions.

This engine has been certified to meet US EPA Evaporative emissions requirements in the installed configuration.

Attempting to modify or make adjustments to the engine emmission system by unauthorized personnel without proper training could damage the equipment or create an unsafe condition.

Additionally, modifying the fuel system may adversely affect evaporative emissions, resulting in fines or other penalties.

Emission Control Label

The emission control label is an integral part of the emission system and is strictly controlled by regulation(s).

The label must remain with the engine for its entire life.

If a replacement emission label is needed, please contact your authorized Honda Engine Distributor.

Table 1. Specifications (Saw)	
Blade Capacity	508 mm (20 in.)
Cutting Depth	191 mm (7.5 in.)
Arbor Diameter	25.4 mm (1 in.)
Front Wheels	125 mm Dia. x 50 mm Wide (5 in. x 2 in.)
Rear Wheels	203 mm Dia. x 50 mm Wide (8 in. x 2 in.)
Nominal Mass*	173 kg (380 lbs.)
Maximum Operating Mass lbs. (kg)**	201 kg (443 lbs.)
Sound Pressure at Operator's Position	88.8 dB
Hand/Arm Vibration (At Handle)***	5.61 ms^{-2}

* **Nominal Mass:** Mass without blade, all fluid tanks empty, any optional parts removed.

** **Maximum Operating Mass:** Includes blade, all fluid tanks full, any necessary components installed.

*** **Hand/Arm Vibration** (at handle) results with SP2 Saw cutting cured concrete at a depth of 38.1mm (1-1/2 in.) with 508 mm (20 in.) blade at FULL THROTTLE.

Table 2. Specifications (Engine)	
Model	GX630RTXF2
Engine Type	Air-cooled, 4-stroke OHV
Net Power Output	20.8 HP (15.5 kW) @ 3,600 rpm
Bore x Stroke	3.1 x 2.8 in (78 x 72 mm)
Displacement	42 in^3 (688 cm^3)
Net Torque	35.6 ft lbs (48.3 Nm) @ 2,500 rpm
Carburetor	Horizontal Type, Two-Barrel Butterfly
Ignition System	Digital CDI with variable ignition
Starting System	Electric Start
Lubrication System	Forced Lubrication
Air Cleaner	Paper Filter
Oil Capacity	2.1 US qt (2.0 l)
Fuel	Unleaded 86 octane or higher
Dry Weight	97.88 lb(44.4 kg)
Dimensions	15.94 x 16.14 x 17.24 in (405 x 410 x 438 mm)

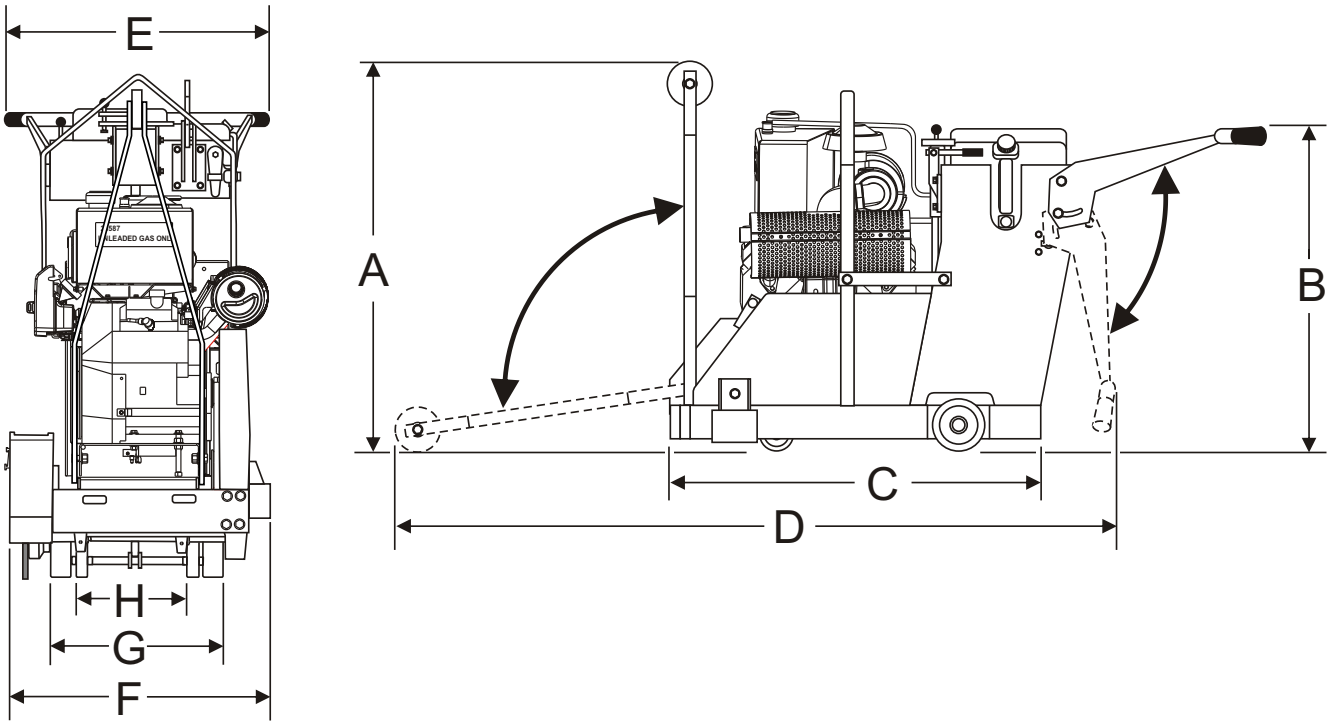


Figure 1. Dimensions

Table 3. Dimensions		
REFERENCE LETTER	**DESCRIPTION**	**DIMENSIONS IN. (MM)**
A	Max Height (Handle Bars fully lowered & Front Pointer raised)	914 mm (36 in.)
B	Max Handle Bar Height (fully raised)	1016 mm (40 in.)
C	Max Length (Handle Bars & Front Pointer fully raised)	1092 mm (43 in.)
D	Max Length (Handle Bars fully raised & Front Pointer lowered)	1727 mm (68 in.)
E	Max Handle Bar Width	610 mm (24 in.)
F	Max Width	622 mm (24.5 in.)
G	Rear Wheel Base	406 mm (16 in.)
H	Front Wheel Base	356 mm (14 in.)
Crated Dimension (L x W x H): 1194 x 762 x 1118 mm (47 x 30 x 44 in.)		

INTENDED USE

The SP2S20H saw is designed for pavement cutting utilizing diamond blades. Operation of the saw should be in accordance with the manufacturer's instructions. The manufacturer cannot be held liable for damages as a result of misuse.

FAMILIARIZATION

The saw has been engineered for general and industrial flat sawing applications. The reinforced steel box frame design adds strength necessary to reduce blade vibrations while cutting. By minimizing blade vibrations, the performance of the blade is enhanced and thus the life of the blade is extended.

Heavy-duty front and rear axles, sturdy oversized wheels, and industrial undercarriage assembly ensure accurate tracking and years of reliable use.

Additionally, the general strength-to-weight ratio design of the frame and chassis assembly provides for optimum weight distribution to keep the blade running true in the cut. A rugged spindle bearing assembly ensures minimal flutter and shaft harmonics providing the most advantageous condition for a diamond blade at operating speeds.

The saw comes equipped with a 20-inch blade guard and is engineered to optimize performance using a 20-inch diamond blade. Diamond blades ranging from 14", 16" and 18" may be used with reduced overall performance.

A threaded, manual, raise/lower assembly easily raises and lowers the blade and locks it into position to ensure a constant depth cut. The saw is equipped with a retractable cutting guide, oversized roller bearing wheels, industrial spindle bearings, and a rigid steel frame.

CONSOLE

An ergonomically designed control console allows the operator to easily understand and/or operate the adjustable handlebars, the Raise/Lower Crank Handle, and the transmission engage/disengage lever. Additionally, the console also provides a forward/reverse control.

POWER PLANTS

The SP2S20H saw is classified in the industry as a "medium" powered saw. This classification is particularly useful when selecting the proper diamond blade for an application.

The SP2S20H uses a 20HP Honda GX630RTXF2 air-cooled, 4-stroke OVH gasoline engine. Blade rotation is v-belt driven. This is accomplished by connecting to the output shaft of the engine to an upper drive pulley. The lower drive pulley (Blade) is then connected to the upper drive pulley (Engine) by four V-belts. As the engine shaft rotates, so does the blade.

Refer to the Engine Owner's Manual for specific instructions regarding engine operation and maintenance practices.

The SP2S20H saw is designed, engineered and manufactured with strict adherence to American National Standards Institute, Inc. (ANSI) guidelines B7.1 and B7.5.

WATER SYSTEM

The SP2S20H saw provides a water plumbing system that evenly distributes water volume and optimum flow rate to both sides of the blade to keep it cool when cutting. The basic water system provides a valve that connects to a standard garden hose.

The water is delivered (via a standard garden hose) to the blade guard water plumbing system. When a water source is not available, a (built-in) removable water tank delivery system may be used for dust suppression.

FEATURES

- Engine Stop Switch conveniently located on handle bar
- Super-rigid box frame ensures straight cuts while resisting warping and blade vibration
- Rugged roller bearing wheels for long service life
- Comfortable grip handles
- Easy cranking for manually raising/lowering the blade to the desired cutting height
- Hinged front, lift-up blade guard is designed to provide easy blade replacement
- Saw position guide helps ensure straight cuts
- Main water system provides optimum flow and volume of water to both sides of the blade
- Manually operated wheel clamps help to prevent unwanted displacement of saw

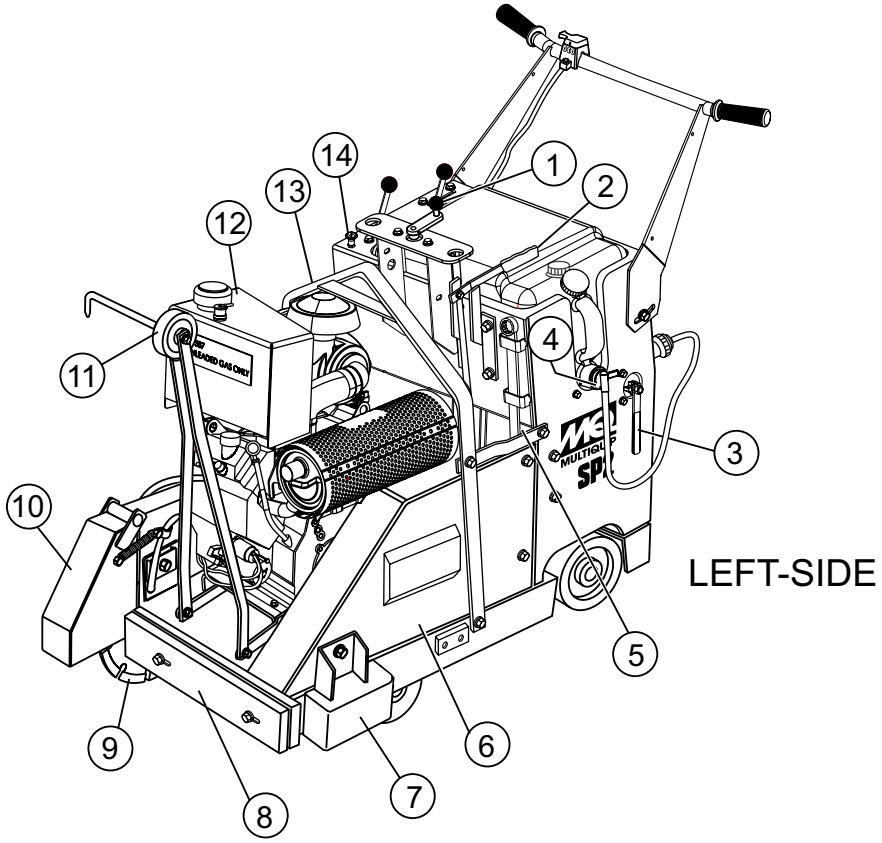


Figure 2. SP2S20H Components (Left Side)

1. **Raise/Lower Crank Handle** — Physically orients saw (raises or lowers) depending on cranking direction (clockwise or counterclockwise). Turning the handle clockwise lowers the saw while turning the saw counter-clockwise raises the saw.
2. **Transmission Engage/Disengage Lever** — Forward locking position engages transmission. Rear Locking position disengages transmission from rear axle and permits "free wheeling".
3. **Water ON/OFF Valve** — **ON** position opens valve and permits water to flow from source through saw water hose. **OFF** position closes valve and halts the flow of water.
4. **WATER TANK ON/OFF VALVE** —Turns on/off the flow of water from the internal water tank.
5. **Blade Removal Tool** — Used to remove saw blade from unit.
6. **Belt Cover** — Covers the drive shaft belt, engine pulley and the hydraulic transmission belt.
7. **Drive-Shaft Pulley Guard** — Covers the drive shaft pulley.
8. **Balance Weight** — Helps keep the blade running in the cut while the saw is traveling through concrete.
9. **Saw Blade** — Use only MQ recommended blades. This unit can use 14, 16, 18, and 20-inch blades.
10. **Saw Blade Guard** — Covers the saw blade during cutting operations and allows water hoses to be connected to the cover for wet cutting.
11. **Pointer Arm** — Front pointer wheel assists in straight tracking. Lifts up for storage and pivots down for use.
12. **Fuel Tank** — Holds unleaded gasoline.
13. **Lifting Bale** — Allows for easy lifting and transporting of the saw.
14. **Choke Knob** — Push down to close choke when operating the saw in cold weather conditions, pull up to open choke in normal weather.

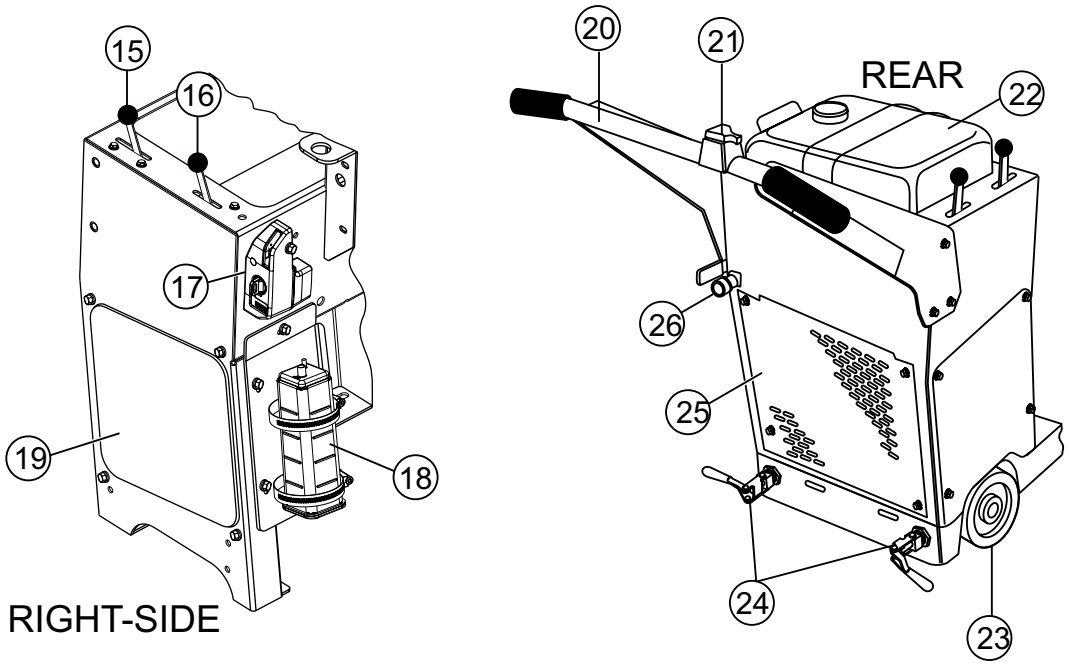


Figure 3. Saw Components (Right Side/ Rear)

15. **Forward/Reverse Speed Lever** — Controls forward and reverse speeds. Provides positive neutral for engine start. **ALWAYS** place transmission engage/ disengage lever in the engage position before setting speed lever.
16. **Throttle Lever** — Used to adjust engine RPM speed (**SLOW** or **FAST**).
17. **Ignition Module** — Turn switch clockwise to start engine.
18. **Charcoal Canister** — A container filled with activated charcoal that traps gasoline vapors emitted by the fuel system.
19. **Battery Access Panel** — Allows access to the battery for replacement or maintenance.
20. **Handle Bars** — Used to steer and push the saw during cutting operations. The handle can be folded down for transportation.
21. **Engine OFF Switch** — Toggle in either direction to stop the engine.
22. **Water Tank** — A 5-gallon (18.95 liters) capacity water tank provides water for the saw blade during short-run cutting applications and dust control.
23. **Rear Wheels** — Allows the saw to be rolled across ground. The rear wheels are turned by the spline gears attached to the hydraulic transmission system.
24. **Wheel Clamp** — Move handle down, making contact with wheel, to avoid unwanted rolling movement. Lift handle to release.
25. **Access Panel (Hydraulic Drive Transmission)** — Allows access to the hydraulic drive transmission that controls the saw's forward and reverse movement by using the forward/reverse speed lever.
26. **Water Source Adapter** — Connects to the water source, either to the water tank through a tube or to a garden hose.

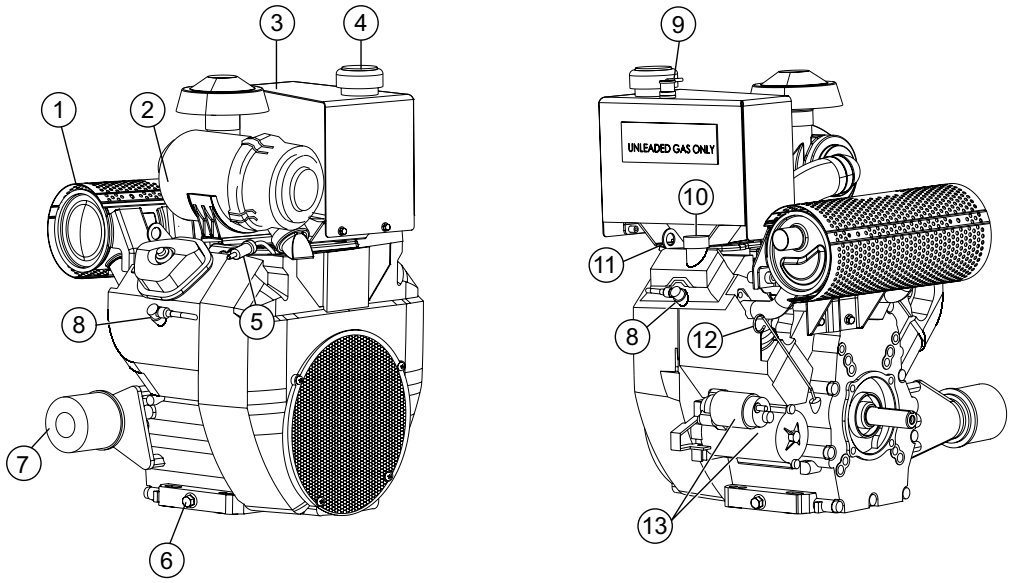


Figure 4. Engine Components

INITIAL SERVICING

The engine must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's engine manual for instructions and details of operation and servicing.

1. **Muffler** — Used to reduce noise and emissions.

⚠ WARNING

Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.

2. **Air Cleaner** — Prevents dirt and other debris from entering the fuel system. Unsnap air filter cover to gain access to filter element.
3. **Fuel Tank** — Five gallon capacity; use unleaded gasoline.

⚠ DANGER

Add fuel to the tank only when the engine is stopped and has had an opportunity to cool down. In the event of a fuel spill, **DO NOT** attempt to start the engine until the fuel residue has been completely wiped up and the area surrounding the engine is dry.

4. **Fuel Filler Cap** — Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tightened securely. **DO NOT** overfill.
5. **Fuel Filter** — Filters fuel for contaminants.
6. **Oil Drain Bolt** — Remove to drain crankcase oil.
7. **Oil Filter** — Spin-on type, filters oil for contaminants.
8. **Spark Plug** — Provides spark to the ignition system. Set spark plug gap to 0.028 - 0.031 inch (0.6 - 0.8 mm). Clean spark plug once a week.
9. **Rollover Valve** — Prevents the fuel from leaking from the tank in the event of a rollover.
10. **Oil Filler Cap** — Remove to add engine oil.
11. **Lifting Eye** — Provided for use when the removal/installation of the engine becomes necessary.
12. **Oil Dip Stick** — Remove to check amount and condition of oil in crankcase.
13. **Starter Solenoid** — Starts engine when ignition key is rotated to the ON position.

PREPARATION / PRE-INSPECTION

1. Read and fully understand this manual, the safety information section in particular, and the engine manufacturer's manual supplied with the saw.
2. Select the correct blade for each application. Refer to the Blades and Blade Placement sections for further information.

3. Check blade for wear or damage. Handle all blades with care and **ALWAYS** replace a damaged blade.
4. Clean the saw, removing dirt and dust, particularly the engine cooling air inlet, carburetor and air cleaner.
5. Check the air filter for dirt and dust. Replace the air filter if it is found to be dirty.
6. Check carburetor for external dirt and dust. Clean with dry compressed air.
7. Check fastening nuts and bolts for tightness.
8. Ensure a suitable water supply is available, hooked up, and used (connected via garden hose or with a water tank supply system).

ENGINE OIL CHECK

1. To check the engine oil level, place the saw on secure level ground with the engine stopped. The frame platform must be level to accurately check the engine oil.
2. Remove the filler dipstick from the engine oil filler hole (Figure 5) and wipe it clean.

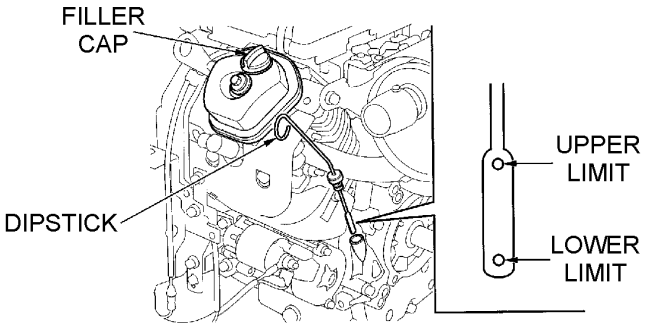
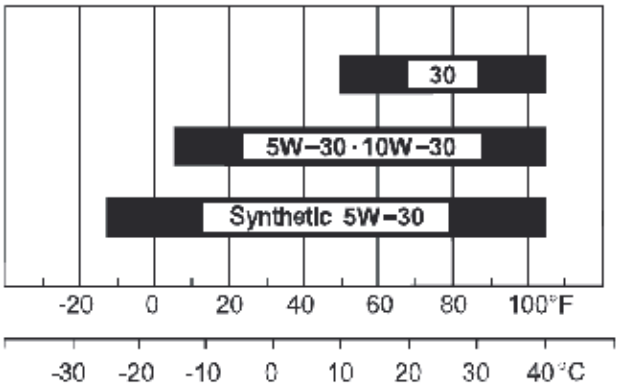


Figure 5. Engine Oil Dipstick

3. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
4. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil type (Table 4). Maximum oil capacity for the Honda GX630 engine is 2.1quarts (2.0 liters).

Table 4. Recommended Viscosity Grades



GASOLINE CHECK

1. Remove the gasoline cap located on top of fuel tank.
2. Visually inspect to see if fuel level is low. If fuel is low, replenish with unleaded fuel.
3. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel.

HYDROSTATIC TRANSMISSION

An EATON® Model 7 hydrostatic transmission (Figure 6) provides the power for the saw's propulsion system. The transmission drives a sprocket that directly connects the spline drive to the rear wheels. The no load forward/reverse speeds are approximately 24.4 m/min (80 ft/min).

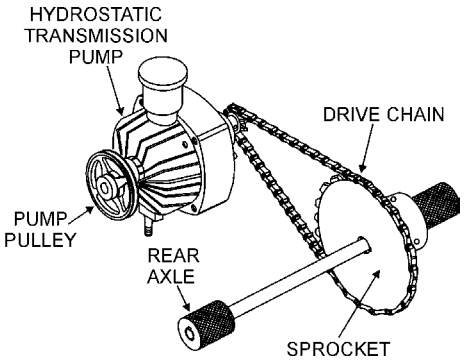


Figure 6. Hydrostatic Transmission

1. The transmission is factory filled with approved hydraulic fluid that has a viscosity equivalent to SAE 20W-20. Should additional servicing be required, the following hydraulic fluids are recommended:
   - General Motors Dextron B
   - Ford MM2C-33F
   - Ford M2C-41A
   - International harvester Hy-Tran Fluids
2. Note the level marks on the reservoir (Figure 7). It is essential to reference the existing oil conditions (A) cold or (B) hot prior to operating the saw. **DO NOT** over fill the fluid reservoir.

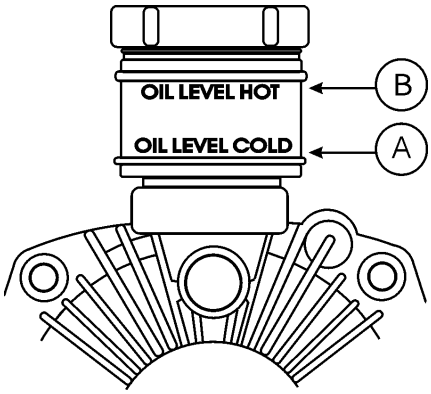


Figure 7. Transmission Reservoir

NOTICE

Overfilling the transmission with hydraulic fluid may cause the seals to rupture causing mechanical damage.

BLADE INSPECTION

This saw is to use the following type of blades only:

- ***Steel Core Segmented or Continuous Diamond Rim Cutting Wheel***

Any other type of blade (tool) is not to be used. See Table 5 for specific blade usage for different materials.

Perform the blade inspection as described. Refer to Figure 8 for the location.

Table 5. Material Listing and Blade Selection

Material	Blade
Cured Concrete	Cured Concrete Blade
Green Concrete	Green Concrete Blade
Asphalt	Asphalt Blade
Asphalt over Concrete	Asphalt/Concrete Blade
Block, Brick, Masonry, Refractories	Masonry Blade
Tile, Ceramic, Stone	Tile Blade

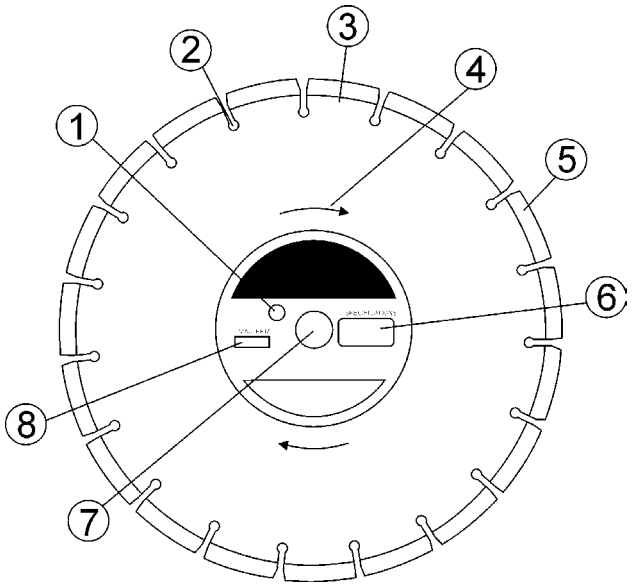


Figure 8. Diamond Blade Inspection Points

1. **Drive Pin Hole** — A commonly located hole on the diamond blade core that prevents operational blade slippage between the inner and outer blade flanges (collars). Inspect the diameter of the hole to ensure there is no distortion and that a snug fit develops between the hole and drive pin.
2. **Stress Relief Holes (Gullets)** — Check the steel core for cracks that may have propagated from the slots and/or gullets. Cracks indicate extreme fatigue failure and if sawing continues, catastrophic failure will occur.
3. **Edge Of The Steel Core** — Check the diameter edge for discoloration (blue oxidation) indicating an overheating condition caused by insufficient cooling water/air. Overheating of blades may lead to loss of core tension and increase the possibility for blade failure. Check to make sure the steel core's width is

uniform about the rim of the blade, and not succumbing to an "under cutting" condition brought about by highly abrasive material or improper under cutting core protection.

4. **Directional Arrow** — Check to ensure that the blade is oriented properly on the blade shaft for sawing. Reference the directional arrow in the blade and place it so the direction of rotation "downcuts" with the turn of the shaft.

5. **Diamond Segment or Rim** — Ensure there are no cracks, dings, or missing portions of the diamond segment/rim. **DO NOT** use a blade that is missing a segment or a portion of the rim. Damaged and/or missing segments/rims may cause damage to your saw and injury to the user or others in the operating area.

6. **Specifications** — Ensure that the blade specifications, size, and diameter properly match up to the sawing operation. Wet blades must have water to act as a coolant. Utilizing a diamond blade not matched properly to the task may result in poor performance and/or blade damage.

7. **Arbor Hole** — It is essential that the arbor hole diameter properly matches the blade, and that it is free from distortions. Correct blade flanges (collars) must be used. The inside face of the flanges must be clean and free of debris. An out of round arbor condition will cause damage to the blade and the saw.

8. **MAX RPM** — This RPM reference is the maximum safe operating speed for the blade selected. **NEVER** exceed the max RPM on the diamond blade. Exceeding the MAX RPM is dangerous and may cause poor performance and damage the blade. All blades must be designed to meet or exceed the maximum spindle RPM.

⚠ CAUTION

Failure to thoroughly inspect the diamond blade for operational safety could result in damage to the blade and the saw, and may cause injury to the user or others in the operating area. All damaged blades must be discarded.

BLADE SELECTION

Selecting the diamond blade type and grade defines how the blade will perform both in cutting speed and blade life.

Selection of the proper diamond blade depends on the following factors:

- Material to be Cut
- Type of Saw Being Used
- Horsepower of Saw
- Hardness Characteristics of the Material
- Performance Expectations

Factors for sawing economy are:

- Type of Blade
- Depth of Cut
- Sawing Speed
- Characteristics of the Material Being Cut

BLADE SPEED

A diamond blade's performance is directly connected to specific peripheral (rim) speeds.

The following shaft rotational speeds have been factory set to ensure optimum blade performance:

- ***SP2S20H - Engine RPM: 3,600***
- ***SP2S20H - Blade Shaft RPM: 2,270***
- ***20" Diamond Blade SFPM: 11,880***
- ***18" Diamond Blade SFPM: 10,692***
- ***16" Diamond Blade SFPM: 9,504***
- ***14" Diamond Blade SFPM: 8,316***

⚠ CAUTION

Operating saw blades at rotational speeds greater than those specified by the manufacturer can cause blade damage,and may injure the user or others in the operating area.

BLADE PLACEMENT

The following steps should be accomplished before placing the diamond blade on the blade shaft.

1. Set the engine ON/OFF switch to the **OFF** position.
2. Raise the saw to a high position by cranking the Raise/Lower handle in a counterclockwise direction.
3. Use the Blade Nut Wrench and Blade Shaft Locking Wrench stored on the front section of the console to install the diamond blade.

Refer to Figure 9 when removing or installing the diamond blade as follows.

1. **Blade Guard** — Raise the front half of the blade guard to expose the blade shaft nut and outer flange.
2. **Blade Nut Wrench** — Remove the blade nut wrench from the tool holder and unscrew the blade shaft nut (right-side). This nut loosens clockwise and tightens counterclockwise.
3. **Blade Nut** — Remove the blade nut. For reassembly, **DO NOT** overtighten the blade nut against the outer flange. Tighten blade nut approximately 125 - 175 ft-lbs (169 - 237 N-m).
4. **Outside Blade Flange (Collar)** — Ensure that the flange face is clean and free of debris and is placed flush against the diamond blade. Check that the drive pin goes through the blade pin hole and seats properly into the inner flange collar.
5. **Blade Pin Hole** — Align this hole with the drive pin hole on the inner flange collar.
6. **Diamond Blade** — Ensure that the proper blade has been selected for the job. Pay close attention to the directional arrow on the blade, clockwise for right-side cutting and counterclockwise for left-side cutting. The arbor hole of the blade must match the 1-inch arbor of the blade shaft.
7. **Inner Flange Collar** — This flange is fixed upon the blade shaft and is manufactured with a drive pin hole. The inside surface of the flange must be free of debris and must permit a tight closure on the surface of the blade.

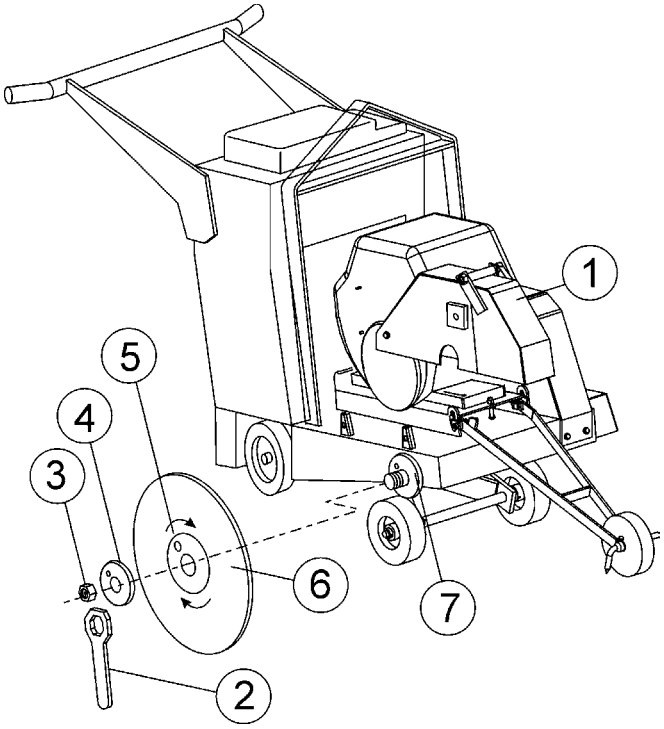


Figure 9. Diamond Blade Placement

GUARDS AND COVERS

CAUTION

NEVER operate the saw without blade guards and covers in place. **DO NOT** operate with the front of the blade guard raised. The blade exposure cannot exceed 180 degrees during operations.

Check the following on the blade guard (Figure 10).

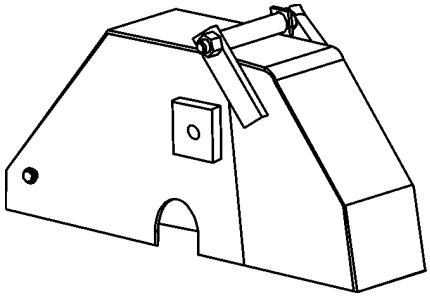


Figure 10. Blade Guard

1. Check to ensure the capacity of the blade guard matches the diameter of your diamond blade.

2. Check that the guard seats firmly upon the bayonet fitting of the saw frame.
3. Check that the spring tensioned front cover of the guard is firmly seated with the rear section of the guard, and there are no gaps.
4. Check the fit of the water hoses in the sides of the blade guard. **NEVER** lift the blade guard while cutting.
5. Check that the flood water tubes are clear and open. Test the water supply for pressure and flow (to both sides of the blade) before sawing operations.

Check the following on the blade flange cover (Figure 11):

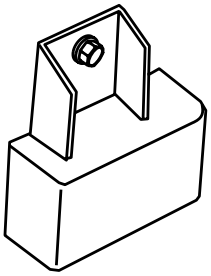


Figure 11. Blade Flange Cover

6. Check that the flange cover seats firmly upon the bayonet fitting of the saw frame prior to operation.
7. This flange cover is to be in place when cutting from either the right or left side of the saw.

V-BELTS ALIGNMENT AND TENSIONING

This saw is equipped with 4 premium V-belts that have been aligned and tensioned by factory personnel. All V-belts **MUST** be installed for proper operation of the saw. Running the saw with less than the required number of belts may damage the saw or equipment.

Perform the following to check the alignment of V-belts:

1. Remove the bolts that secure the V-belt cover (Figure 12) to the saw frame.

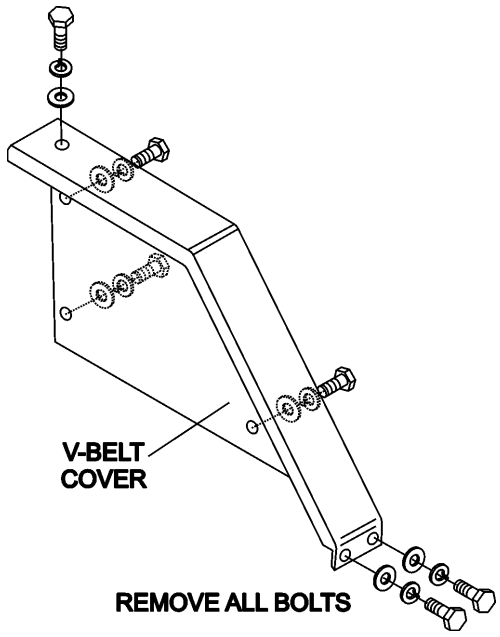


Figure 12. V-Belt Cover Removal

2. Check uniform parallelism (Figure 13) of V-belts and pulley (sheaves). Use a straight edge or machinists's square against both pulleys and adjust both pulleys until equally aligned.

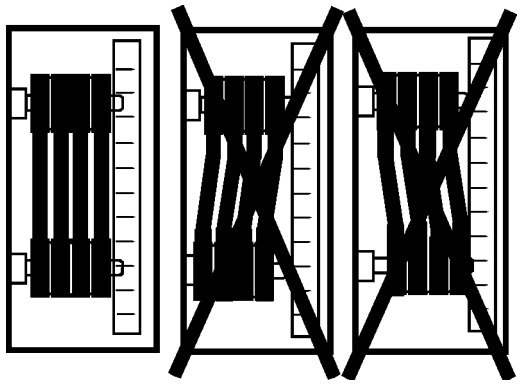


Figure 13. V-Belt Parallelism

3. Check V-belt tension (Figure 14) by using a tensionmeter (2.7 - 4.1 kg/6.0 - 9.0 lbs.) against the inside belt at a midpoint between the two pulleys, or by deflecting the center belt at a midpoint 10 mm (3/8") - 13 mm (1/2").

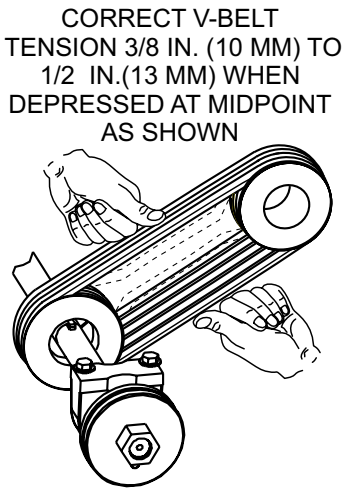


Figure 14. V-Belt Tension

NOTICE

DO NOT over-tension or under-tension the V-belts. Severe damage can occur to the saw and engine crank shaft if the belts are over-tensioned. A decrease of power to the blade and poor performance will result if the belts are under-tensioned (loose on pulleys).

4. If the V-belts becomes worn or loose, replace them by using the V-belt part numbers listed in Table 6.

Table 6. V-Belts and Pulleys

Blade Size	V-Belt P/N (Qty)	Engine Pulley P/N	Blade Shaft Pulley P/N
508mm (20 in)	15897 (4)	28833-002	23280-001

WATER TANK

This saw is equipped with a removable 19-liter (5-gallon) on-board water tank fitted in the top of the console which can be connected to the brass hose fitting on the rear of the operator's console (Figure 18).

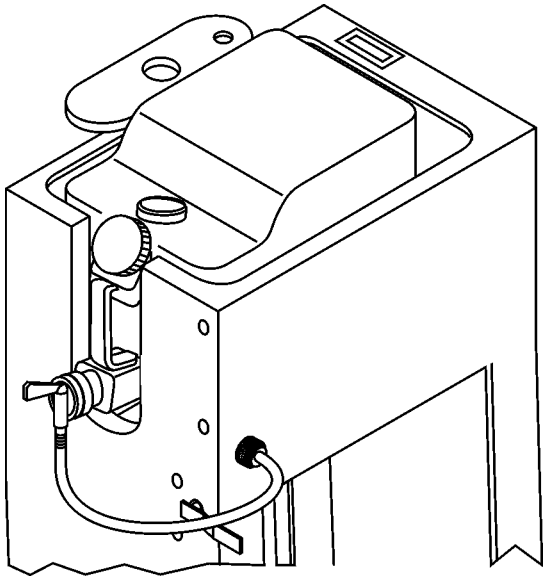


Figure 15. Water Tank

Before using the water tank, ensure it is filled to capacity and connected to the hose fitting to provide lubrication during cutting. An external water source can also be connected to the saw for extended wet cutting operations.

HANDLE BAR ADJUSTMENT

This saw has adjustable height handle bars. Before operating the saw, adjust the handle bar height to a comfortable working position:

1. Loosen the height adjustment bolts (Figure 16) on the handle bars until the handle bars can freely pivot.

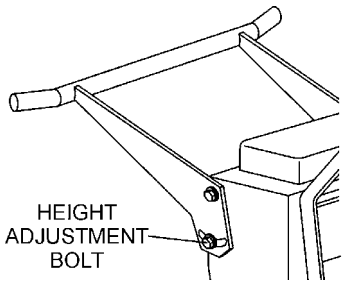


Figure 16. Handle Bar Adjustment Bolt

2. Move the handle bars (Figure 17) up or down to operator's desired preference.

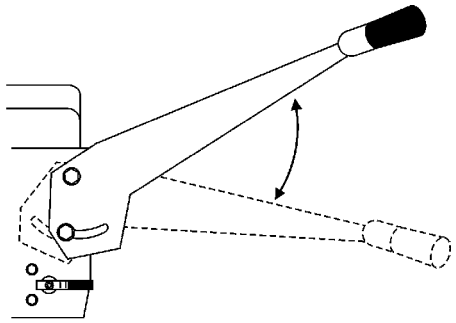


Figure 17. Handle Bar Height Adjustment

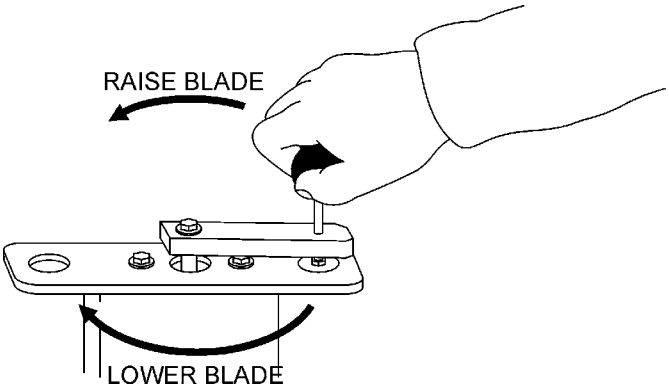
3. Tighten the height adjustment bolts to secure the handle bars in place.

⚠ CAUTION

To avoid losing control of the saw, be sure to fully tighten the adjustment bolts before operation to prevent the bolts from loosening during cutting.

BLADE HEIGHT ADJUSTMENT

This saw uses a manual raise/lower crank handle located on the console with clockwise rotation providing lowering action, and counterclockwise rotation providing raising and lowering action (Figure 18).



NOTICE

When moving the saw around between cutting, fully raise the blade to avoid striking the ground with the blade.

DETERMINING THE CUT DEPTH

To adjust the blade height:

1. Pull upward on the raise/lower crank handle knob.
2. Rotate the crank handle clockwise to lower the blade. Rotate the crank handle counterclockwise to raise the blade (Figure 18). The handle will stop rotating when the blade has been fully raised or lowered.

When preparing to cut, your blade size determines the depth of the cut. See Table 7 to determine the proper blade size for your required cutting depth.

Table 7. Blade Size Selection

Diamond Blade Diameter	Depth of Cut
304.8 mm (12 in.)	92.1 mm (3-5/8 in.)
355.6 mm (14 in.)	117.48 mm (4-5/8 in.)
406.4 mm (16 in.)	142.88 mm (5-5/8 in.)
457.2 mm (18 in.)	168.28 mm (6-5/8 in.)
508 mm (20 in.)	193.68 mm (7-5/8 in.)

ENGINE STARTUP

1. Ensure the wheel clamps are in the **LOCKED** position. (Figure 19).

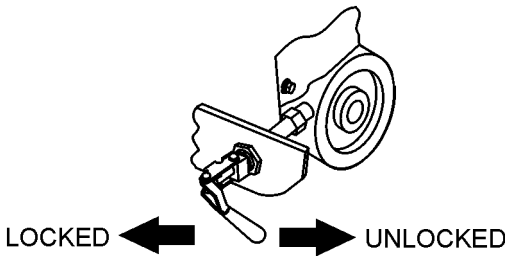


Figure 19. Wheel Clamp

2. Ensure the Engine Shutdown Switch on the handlebar and the ignition switch are both in the **OFF** position to avoid accidental starting (Figure 20 and Figure 21).

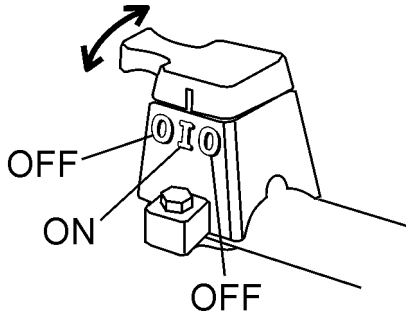


Figure 20. Engine Shutdown Switch

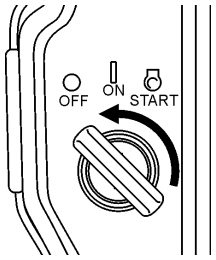


Figure 21. Ignition Switch (OFF position)

3. Ensure the diamond blade has been mounted correctly and that it is raised above the surface you are about to saw.

NOTICE

The **CLOSED** position of the choke lever enriches the fuel mixture for starting a COLD engine. The **OPEN** position provides the correct fuel mixture for normal operation after starting, and for restarting a warm engine..

4. If operating the saw in cold weather conditions, place the Choke Lever (Figure 22) in the **CLOSED** position.

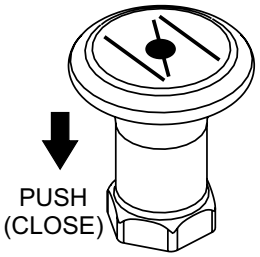


Figure 22. Choke Lever (Closed Position)

5. In normal weather conditions, place the choke lever in the OPEN position (Figure 23).

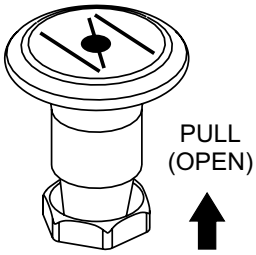


Figure 23. Choke Lever (OPEN Position)

6. Place the throttle lever (Figure 24) halfway between fast and slow for starting.

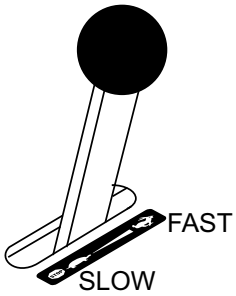


Figure 24. Throttle Lever (Mid Position)

7. Rotate the engine shutdown switch (Figure 20) to the **ON** position.

8. Rotate the ignition switch to the **START** position to engage the starter.

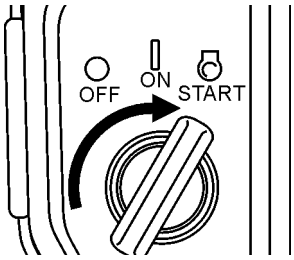


Figure 25. Ignition Switch (START) position

9. Once the engine has started, slowly return the choke lever (Figure 22) to the **CLOSED** position. If the engine has not started repeat steps 4 through 8.

10. Before the saw is placed into operation, place the throttle lever in the **FAST** position and run the engine for several minutes. Check for fuel leaks and noises associated with a loose guard and/or covers.

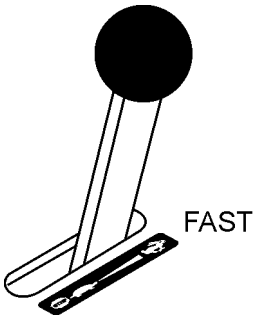


Figure 26. Throttle Lever (FAST Position)

NOTICE

All cutting is done at full throttle. The engine governor has been set at the factory to ensure an optimum speed setting.

⚠ CAUTION

ALWAYS cut with the saw at **FULL THROTTLE**. Attempting to cut with the saw at less than full throttle could cause the blade to bind or stop abruptly in the slab resulting in serious injury to the operator or others in the area.

⚠ CAUTION

DO NOT try to cut faster than the blade will allow. Cutting too fast will cause the blade to rise up out of the cut. Improper cutting rate can decrease the life of the engine and blades.

TRAVELING DURING CUTTING

This saw has a hydrostatic transmission which mechanically propels the saw during cutting operations. To prepare the machine:

1. Place the travel lever in the neutral position (Figure 27).

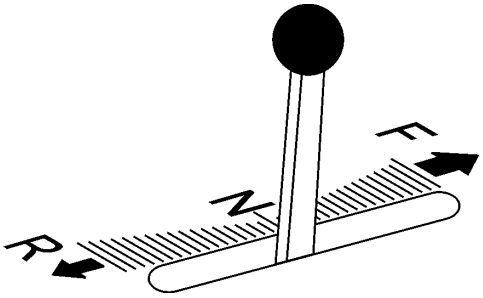


Figure 27. Travel Lever (Neutral Position)

2. Lift the transmission engage/disengage lever, located on the console (Figure 28) to engage. Leaving the lever down disengages the transmission to allow for manual pushing during cutting or moving the machine around the job site.

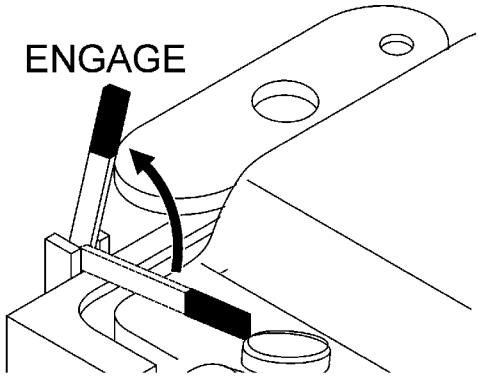


Figure 28. Transmission Engage/Disengage Lever (Engaged Position)

3. Move the travel lever towards the **FORWARD** position to increase forward travel speed during cutting (Figure 29). Placing the travel lever fully forward will move the saw at maximum speed.

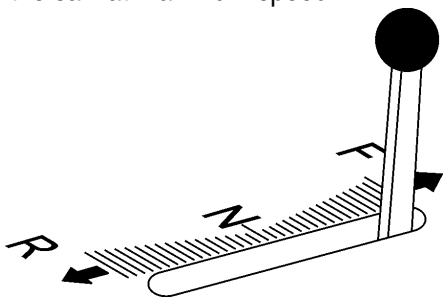


Figure 29. Travel Lever (Forward Position)

4. When reverse movement is required, move the travel lever towards the **REVERSE** position (Figure 30). Placing the travel lever fully in reverse will move the saw backwards at its maximum reverse speed.

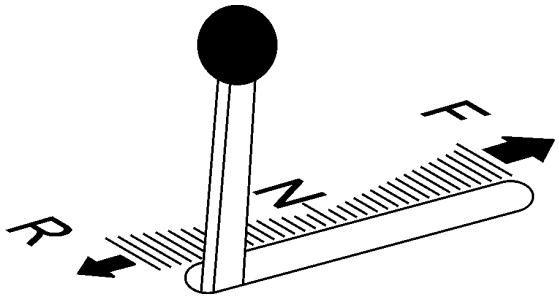


Figure 30. Travel Lever (Reverse Position)

SAW ALIGNMENT

1. The saw employs a front pointer (Figure 31) that has been precisely aligned with the diamond blade at the factory. Accurate tracking is accomplished by referencing the front pointer tip over the cut line. Precise saw direction is accomplished by slight operator pressure against the handle bars.

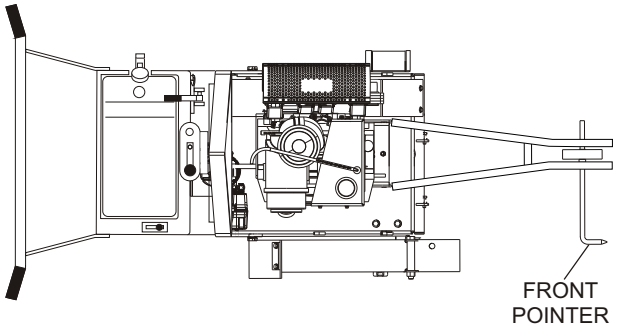


Figure 31. Saw Pointer

2. To reorient a pointer position, loosen the screw that secures the pointer bar to the shaft, adjust as necessary, and retighten the screw.

CUTTING

⚠ WARNING

The operator must wear the appropriate protective equipment and clothing while engaged in sawing. Failure to do so can result in **SERIOUS INJURY**.

⚠ DANGER

DO NOT operate this machine without the Blade Guard or V-belt Guards in place. While the blade is spinning, **DO NOT** place hands, feet, or other body parts near the blade to avoid **SERIOUS INJURY** or **DEATH**.

1. When cutting, determine the required cutting depth and use an appropriately sized blade. Deep sawing is wasteful to the life of the blade.
2. The preferred method of sawing is to step cut in increments of 51 mm (2 inches). Step cutting provides the optimum opportunity for the blade to cut fast and last longest.

WATER SYSTEM

1. Connect hose from water source (on-board water tank or external water source) to the hose fitting connection (Figure 3) of the saw. The source pressure should be approximately 30-40 psi.
2. Ensure the vinyl water tubes are properly inserted into the blade guard holes and are clear of any obstructions.
3. Turn water source on (Figure 32).

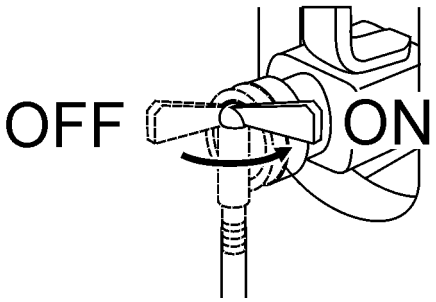


Figure 32. On-board Water Tank ON/OFF Valve

4. Open the water system valve on the left side of the console by moving the lever to the ON position (Figure 33) and ensure the water is flowing equally to both sides of the diamond blade.

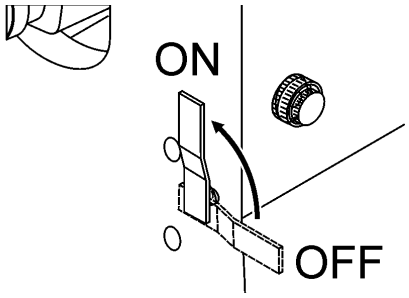


Figure 33. Water System ON/OFF Valve

5. Align the saw along the cut line utilizing the front pointer.

NOTICE

ALWAYS saw in a straight line only. Serious damage to the blade or saw may occur if the saw is twisted or forced to cut radius shapes

6. Slowly lower the diamond blade onto the cut line by cranking the Raise/Lower handle clockwise. When the handle can no longer be turned, the blade will be at its full rated depth.

NOTICE

If the water supply to your blade is interrupted, **STOP** cutting immediately to prevent damage to your blade and/or saw.

If the engine stalls for any reason during cutting, raise the blade out of the cut before restarting.

7. Follow steps 1 to 4 of the Traveling During Cutting section.
8. The rotation of the blade creates a tendency for the saw to slightly pull in a particular direction. To ensure a straight line of sawing, apply pressure against the appropriate side of the handle bar as you slowly advance the saw forward.

NOTICE

ALWAYS saw in a straight line only. Serious damage to the blade or saw may occur if the saw is twisted or forced to cut radius shapes

FINISHING A CUT

1. Raise the blade out of the cut by cranking the Raise/Lower handle counterclockwise. Raise the blade high enough out of the cut to clear the surface and allow the saw to be maneuvered.
2. Shut the engine down according to the **SHUTDOWN PROCEDURE.**

RESTARTING AFTER INTERVENTION

If cutting is interrupted where the engine stops or is turned off while the blade is still in the cut:

1. Turn engine Shutdown switch on handlebar to the **OFF** position.
2. Raise the blade out of the cut
3. Restart the engine as described in the **STARTUP** section.

> ***NOTICE***
>
> The only acceptable method for freeing a stuck blade is to remove the saw from the stuck or pinched blade. **DO NOT** try to get the blade unstuck using the Raise/Lower system or by lifting the saw by the lifting bale, etc.

If cutting is interrupted where the blade is stuck in the cut:

1. Turn Engine On/Off switches to **OFF**.
2. Remove the blade guard.
3. Maneuver the saw away from the stuck blade.
4. A parallel cut made next to the blade may be necessary to free it.
5. Once the blade is free, inspect the blade for damage. Discard blade, if damaged.
6. Ensure an undamaged, usable blade is installed on the saw before cutting is resumed.

SHUTDOWN PROCEDURE

Stopping the engine under normal conditions:

1. Disengage the drive by placing the forward/reverse speed lever (Figure 34) in the **NEUTRAL** position.

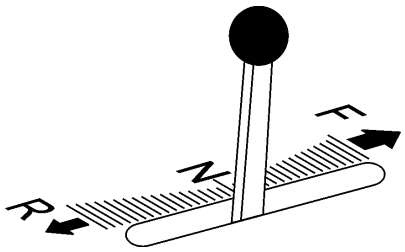


Figure 34. Speed Lever (Neutral Position)

2. Place the engine throttle lever (Figure 35) in the slow position, and listen for the engine speed to decrease. Allow engine to run for 2 or 3 minutes for proper cooldown.

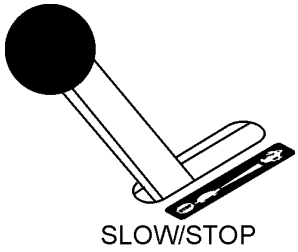


Figure 35. Throttle Lever (Slow Position)

3. Turn the Engine Shutdown Switch located on the handlebars to the **OFF** position. Shutting the engine off using this switch confirms that is functioning properly.
4. Turn the ignition switch (Figure 36) to the **OFF** position. The ignition switch must be turned off to prevent unwanted battery discharge.

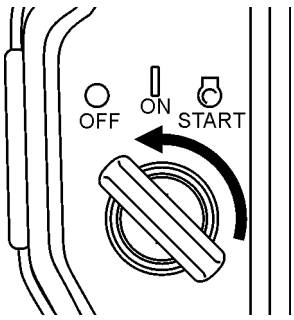


Figure 36. Ignition Switch (OFF Position)

5. Place the fuel valve lever (Figure 48) to the **OFF** position.

Table 8. Engine Maintenance Schedule						
DESCRIPTION (3)	**OPERATION**	**BEFORE EACH USE**	**FIRST MONTH OR 20 HRS.**	**EVERY 6 MONTHS OR 100 HRS.**	**EVERY YEAR OR 300 HRS.**	**EVERY 2 YEARS OR 500 HRS.**
Engine Oil	Check	X				
	Change		X	X		
Engine Oil Filter	Replace	Every 200 Hrs.				
Air Cleaner	Check	X				
	Clean			X (1)		
	Change					X (*)
Spark Plugs	Check/Adjust			X		
	Replace				X	
Spark Arrester	Clean			X		
Fuel Filter	Replace				X (2)	
Fuel Tube	Check	Every 2 years (replace if necessary) (2)				

* - Replace the paper filter element only.

(1) Service more frequently when used in **DUSTY** areas.

(2) These items should be serviced by your service dealer, unless you have the proper tools and are mechanically proficient. Refer to the HONDA Shop Manual for service procedures.

(3) For commercial use, log hours of operation to determine proper maintenance intervals.

Table 9. Saw Maintenance Schedule					
Check Item	**OPERATION**	**DAILY**	**Periodic Maintenance Interval**		
			Every 25 Hrs	**Every 50 Hrs**	**Every 100 Hrs**
Bearing Lubrication (Rear Wheels)	Grease	X			
Bearing Lubrication (Blade Shaft)	Grease	X			
Raise/Lower Adjust Tube	Grease	X			
Transmission Reservoir Cup	Check				X
Drive Chain	Check			X	
Spline Gear Wheels	Check		X		

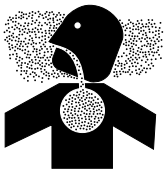
General maintenance practices are crucial to the performance and longevity of your saw. The extreme environments of sawing operations require routine cleaning, lubrication, belt tensioning, and inspection for wear and damage.

The following procedures, devoted to maintenance, can prevent serious saw damage or malfunctioning.

CAUTION

Before servicing or inspection, **ALWAYS** park the saw on a level surface with the blade removed. The Console Engine ON/OFF switch and Engine ON/OFF switch should be in the **OFF** position.

WARNING



Some maintenance operations may require the engine to be run. Ensure that the maintenance area is well ventilated. Exhaust contains poisonous carbon monoxide gas that can cause unconsciousness and may result in **DEATH**

CAUTION

ALWAYS allow the engine to cool before servicing. NEVER attempt any maintenance work on a hot engine.

CAUTION

ALWAYS make sure that the spindle has **COMPLETELY STOPPED ROTATING** before servicing blades and engine components.

GENERAL CLEANLINESS

Clean the machine daily. Remove all dust and slurry buildup. If the saw is steam-cleaned, ensure that lubrication is accomplished **AFTER** steam cleaning.

ENGINE CHECK

Check daily for any oil and/or fuel leakage, thread nut and bolt tightness, and overall cleanliness.

AIR CLEANER

This engine is equipped with a replaceable, high-density paper air cleaner element. See Figure 37 for air cleaner components.

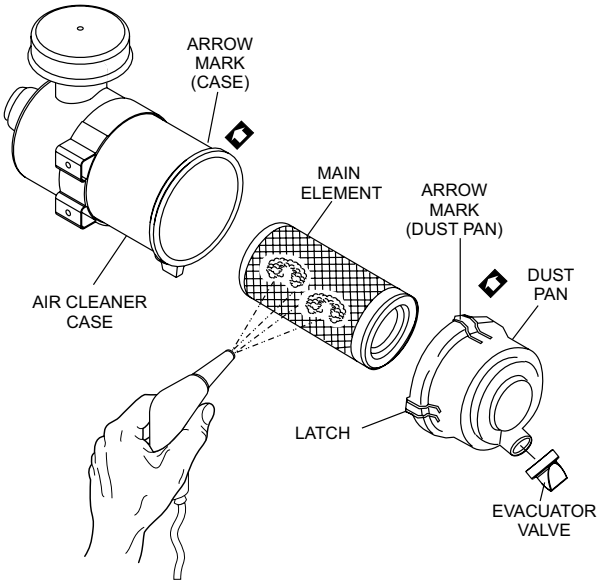


Figure 37. Air Cleaner Components

1. Check the air cleaner daily or before starting the engine.
2. Check for and correct heavy buildup of dirt and debris along with loose or damaged components.
3. Replace the element if it is found to be damaged, excessively dirty, or oily.

NOTICE

Operating the engine with loose or damaged air cleaner components could allow unfiltered air into the engine causing premature wear and failure.

Cleaning the Air Cleaner

CAUTION

Wear protective equipment such as approved safety glasses or face shields and dust masks or respirators when cleaning air filters with compressed air.

The air cleaner should be cleaned every 6 months. To service the air cleaner perform the following steps. See Figure 37 for location of parts.

4. Release the latches located on either side of the air cleaner dust pan. Remove the dust pan.
5. Remove the air cleaner element.
6. Blow low pressure air from the inside of the element to dislodge the dust and dirt. Do not use excessive air pressure or the element will be damaged and will need to be replaced.
7. Replace the element if it is damaged or excessively dirty.
8. Clean the inside of the dust pan.
9. Reinstall the element or if equipped, the precleaner over the paper air cleaner element.
10. Reinstall the air cleaner dust pan and secure the latches.

NOTICE

DO NOT run the engine with the air cleaner removed or without an element.

ENGINE OIL INSPECTION

Check daily. Inspect with blade removed and saw frame on a level surface. Keep the oil clean and at the proper servicing level. SAE 10W-30 of SG is recommended for general use. **DO NOT OVERFILL!**

ENGINE OIL CHANGE

Change engine oil the first month or 20 hours of operation, then every 6 months or 100 hours of operation.

1. Drain the engine oil when the oil is warm as shown in Figure 38.
2. Remove the oil drain bolt and sealing washer and allow the oil to drain into a suitable container.
3. Replace engine oil with recommended type oil as listed in Table 4. For engine oil capacity, see Table 2. **DO NOT** overfill.
4. Install drain bolt with sealing washer and tighten securely.

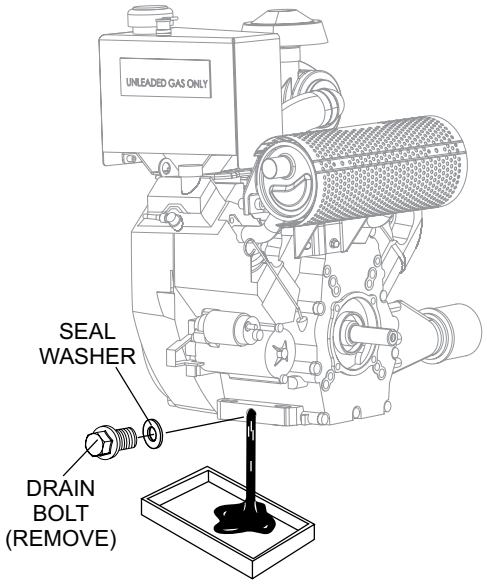


Figure 38. Draining the Engine Oil

ENGINE OIL FILTER CHANGE

1. Replace the engine oil filter (Figure 39) every 200 hours.

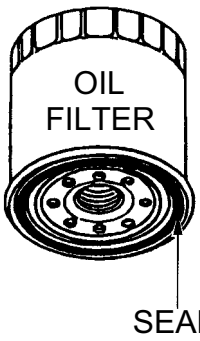


Figure 39. Oil Filter

2. Be sure to coat the seal of the new oil filter with clean engine oil.

FUEL FILTER CHANGE

1. Replace the engine fuel filter (Figure 40) every year or 300 hours.

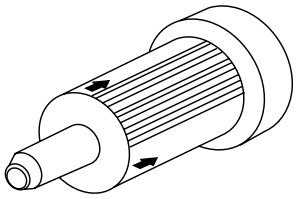


Figure 40. Fuel Filter

SPARK PLUG ADJUSTMENT

NOTICE

For good performance, the spark plugs must be properly gapped and free of deposits.

While a loose spark plug can overheat or damage the engine, overtightening the sparkplug can damage the threads in the cylinder head.

1. Make sure the engine is cool before servicing the spark plugs.
2. Disconnect the spark plug caps. Check for dirt and remove any dirt from around the spark plug area.
3. Remove the spark plugs with a 5/8-inch spark plug wrench.
4. If the spark plugs are damaged, the sealing washer is in poor condition, or if the electrode is worn, replace the spark plugs.
5. Measure the spark plug electrode gaps with a wire-type feeler gauge. If needed, adjust the gap to 0.7 - 0.8 mm (0.028 - 0.031 in), by carefully bending the side electrode. See Figure 41.

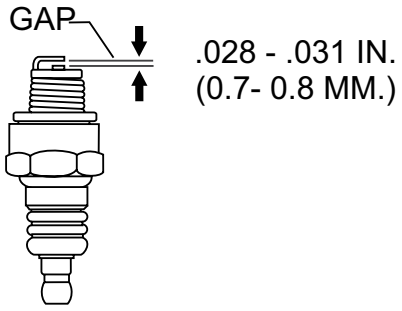


Figure 41. Spark Plug Gap Adjustment

6. Install the spark plug carefully, by hand, to avoid cross threading.
7. After the spark plug is seated, tighten with a 5/8-inch spark plug wrench to compress the sealing washer.
8. When installing a new spark plug, tighten 1/2 turn, after the spark plug seats, to compress the washer.
9. When reinstalling the original spark plug, tighten 1/8 1/4 turn after the spark plug seats to compress the washer.
10. Reattach the spark plug caps.

SPARK ARRESTER CLEANING

Clean the spark arrester every 6 months or 100 hours.

1. Remove the special screw from the muffler and remove the spark arrester (Figure 42).

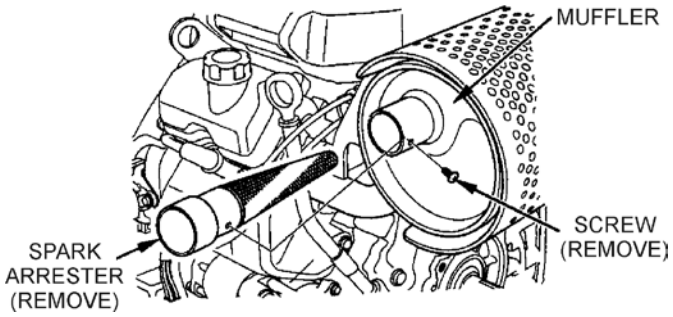


Figure 42. Removing Spark Arrester

2. Carefully remove carbon deposits from the spark arrester screen with a brush (Figure 43).

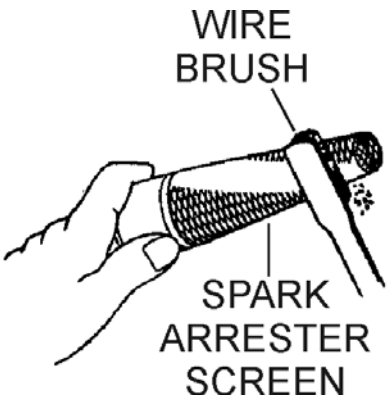


Figure 43. Cleaning The Spark Arrester

3. If the spark arrester is damaged and has breaks or holes, replace with a new one.
4. Reinstall the spark arrester and muffler protector.

BEARING LUBRICATION

There are four grease points for the saw. Use only Premium Extreme Pressure Grease, conforming to NLG1 Grade #2 consistency, to grease the zerk fittings.

1. **Rear Wheels (1)** — Grease daily (Figure 44).

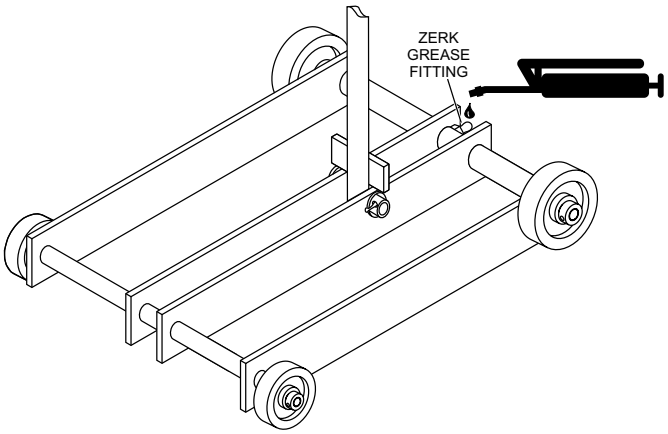


Figure 44. Rear Wheels

2. **Blade Shaft Bearings (2)** — Grease daily (Figure 45).

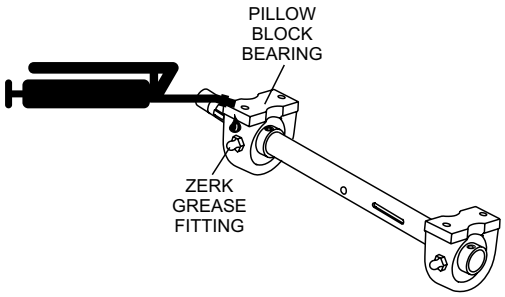


Figure 45. Blade Shaft Bearings

3. **Raise/Lower Adjust Tube (1)** — Grease daily (Figure 46).

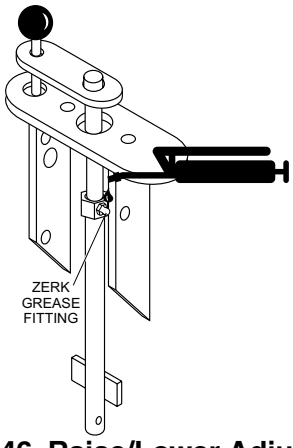


Figure 46. Raise/Lower Adjust Tube

GENERAL TRANSMISSION CARE

The saw utilizes spline gear wheel design coupled with an EATON Model 7 Hydrostatic Transmission that provides forward/reverse propulsion. The simple design of the system keeps maintenance to a minimum.

Transmission Reservoir Cup

Check every 8 hoursof operation. When the transmission is cold (A), check oil level against the level indicator.

NOTICE

DO NOT use multiple viscosity oil. **DO NOT** overfill**.**

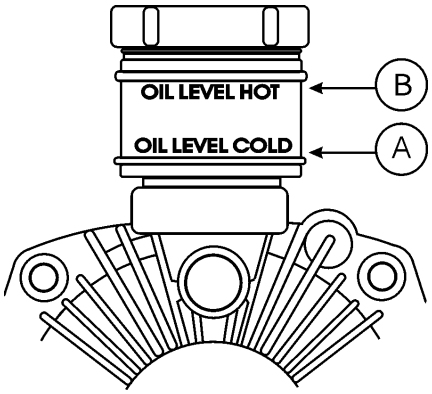


Figure 47. Transmission Reservoir

Servicing:

The transmission reservoir is factory-filled. Should servicing be required, use SAE20W-20, API classification (SE,CC,CD) or better, General Motors Dexron B, Ford M2C-33F, M2C-41A or International Harvester Hy-Tran fluids. For extreme hot weather, drain oil and refill with an oil having a viscosity of SAE30W-30 or SAE40W-40.

Drive Chain:

Check every 50 hours. Periodically wipe the chain clean and relubricate with penetrating chain oil.

The drive chain may stretch requiring tension adjustments. To adjust the drive chain tension perform the following steps. Refer to Figure 48 for location of parts.

1. Loosen the four transmission attachment screws.
2. Pivot the transmission in the "U" slots of the transmission mount until the proper tension is achieved.

NOTICE

Excessive tension on the drive chain will reduce chain life.

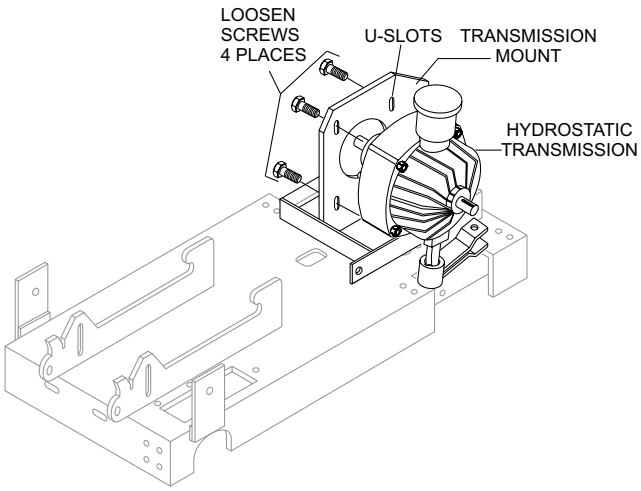


Figure 48. Hydrostatic Transmission

Spline Gear Wheels

Check every 25 hours and clean as necessary. If the spline wheels **DO NOT** engage the rear wheels with sufficient pressure, slippage of the rear wheels may occur.

To adjust the Spline Gear Assembly:

1. Place the transmission engage/disengage lever in the **DISENGAGE** position (Figure 49).

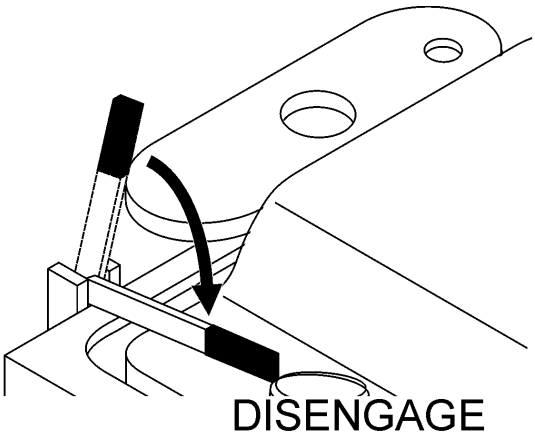


Figure 49. Transmission Lever (Disengaged Position)

2. Loosen the linkage adjustment nut and slightly lengthen the linkage rod (Figure 50).

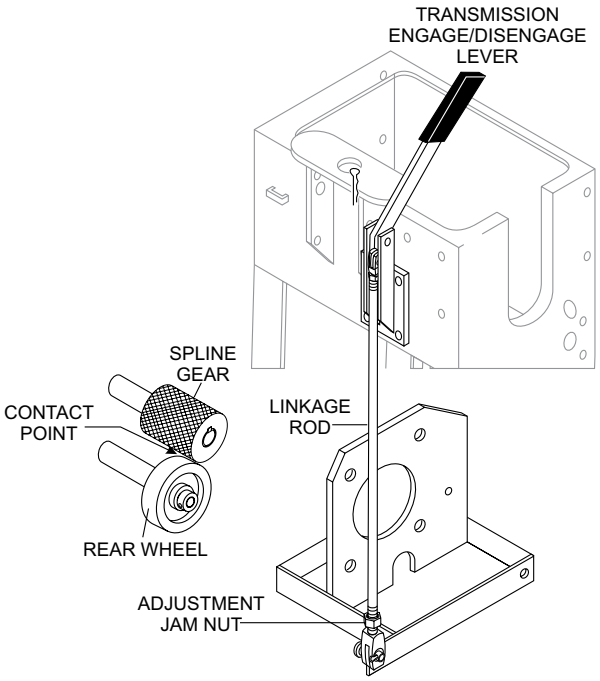


Figure 50. Linkage Adjustment

3. Move the transmission engage/disengage lever to the **ENGAGE** position to observe the proper spline-to-rear wheel contact (Figure 51).

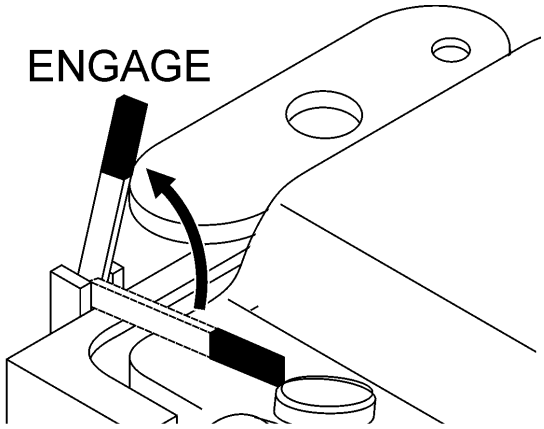


Figure 51. Transmission Lever (Engaged Position)

4. Retighten the adjustment nut.

DRIVE V-BELT CHECK

The V-Belts of the saw have been factory-set utilizing precision standards. Operating the saw with less than the specified number of V-belts (See Table 6), or belts that are slipping or are over-tensioned, will significantly diminish the performance of the saw and may cause damage to the blade.

V-Belt Replacement and Tension Adjustment

1. Remove the Belt Guard (Figure 52).

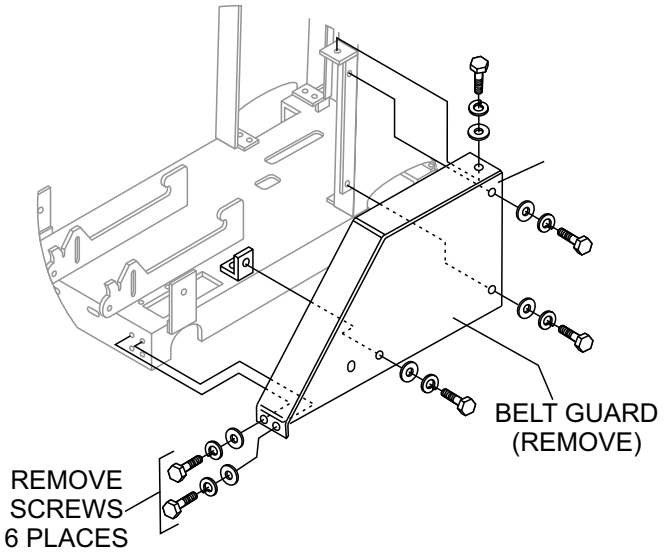


Figure 52. Belt Guard Removal

2. Check the V-belt tension (Figure 53). If the V-belt tension is correct, reinstall belt guard. If V-belt needs adjustment or replacement, continue to the next steps.

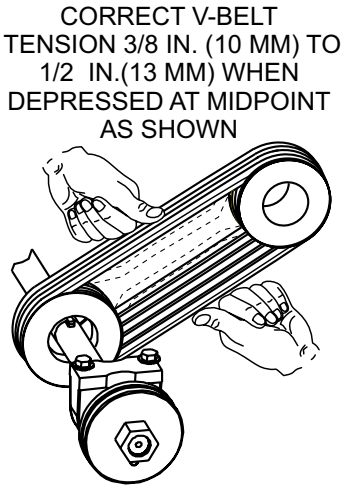


Figure 53. V-Belt Tension Check

3. Loosen the four 1-1/2" HHC screws from the engine mount (Figure 54).

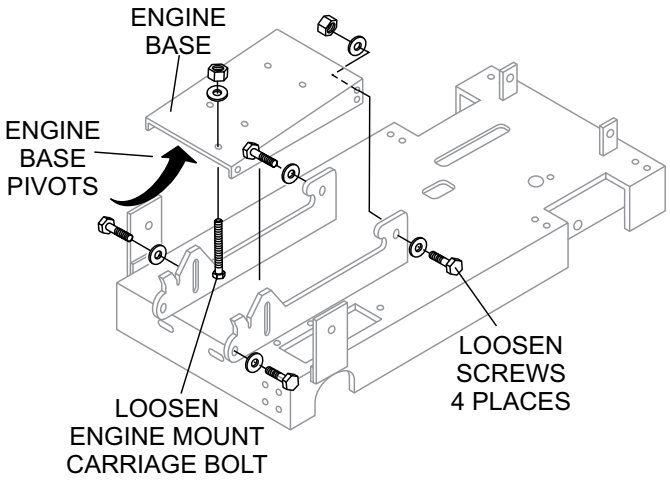
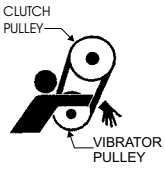


Figure 54. V-belt Adjustment

4. Loosen and back-off the engine mount carriage bolt from the frame to permit the engine base to pivot.
5. Pivot the engine base to adjust the belt to the correct tension (Figure 53).
6. If V-belt needs to be replaced, pivot the engine base to provide slack in the V-belt. Remove the V-belt and replace with new one (See Table 6). Pivot the engine base to adjust the belt to the correct tension.
7. Rotate the engine back into place and tighten the Engine Mount Carriage Bolt.
8. Retighten the four 1-1/2" HHC screws.
9. Replace all guards and covers.

⚠ WARNING



NEVER attempt to check the V-belt with the engine running. Severe injury can occur if your hand gets caught between the V-belt and the clutch. Always use safety gloves.

PULLEY REPLACEMENT AND ADJUSTMENT

The V-belts and their respective pulleys have been professionally aligned at the factory. If there is a requirement to remove/replace or adjust the pulleys, perform the following steps.

1. Select the proper-sized pulley both in outside diameter and arbor size. Use approved parts to ensure the component compatibility.
2. A change in pulley diameters may require specifically sized V-Belts. Contact Multiquip Parts Department to ensure V-Belt compatibility.
3. Remove the V-Belts from around the pulleys, following steps in the V-Belt Replacement and Tension Adjustment section.
4. Remove the set screws that secure the pulleys to the respective shafts (PTO shaft) for engine pulley or the (blade shaft) for the blade shaft pulley.
5. Remove the pulley by sliding it off the shaft.
6. Reorient the new pulley on the shaft, and ensure precise pulley alignment by utilizing an accurate straight edge (see Figure 55 and Figure 56).

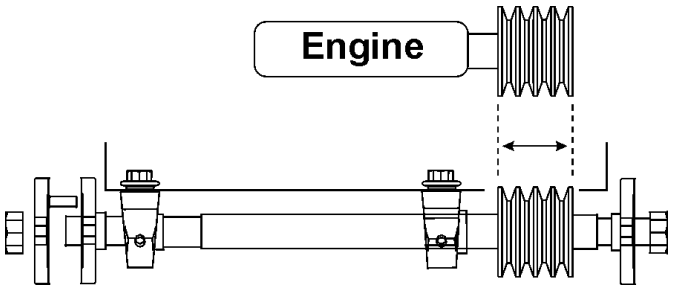


Figure 55. Pulley Alignment

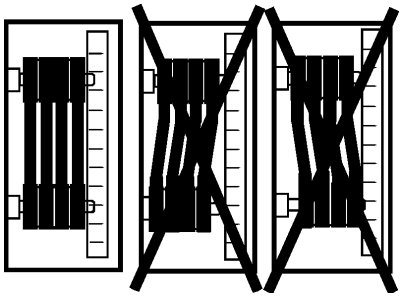


Figure 56. V-Belt Alignment

7. Replace and tighten set screws, treated with a drop of LOCTITE Threadlocker 266.
8. Orient the proper replacement V-Belt(s) around the blade shaft pulley and engine pulley.

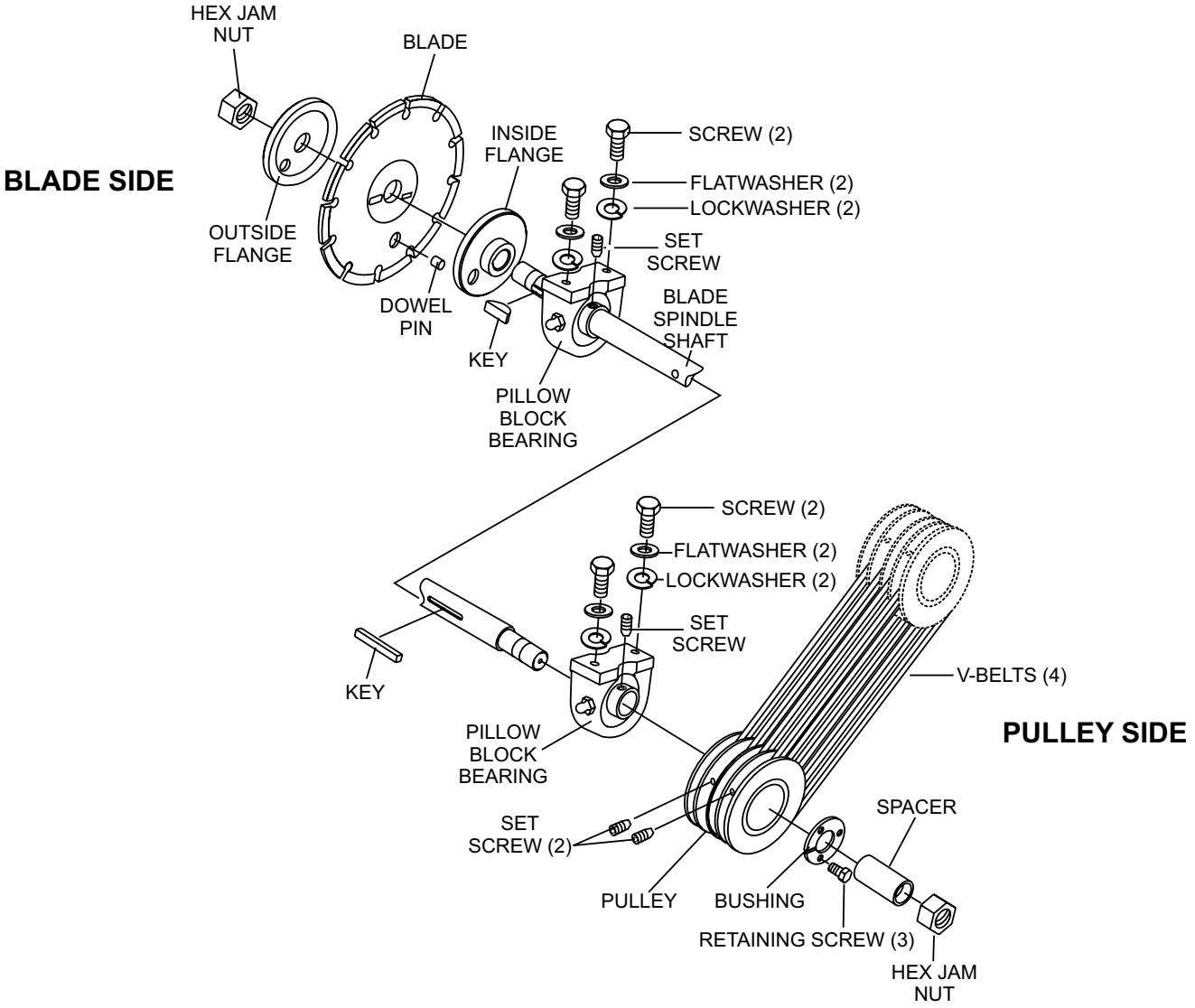


Figure 57. Blade Shaft Bearing Replacement

BLADE SHAFT BEARING REPLACEMENT

Although the steps for this procedure are listed here, it is recommended that this be performed by an authorized service center.

The saw is supported by “tapped base lock collar (with/ set screw)" self-aligning ***Blade Shaft Bearings*** (Figure 57). These heavy duty bearings support the 1-1/4 blade shaft, and have grease (zerk) points conveniently located for service.

NOTICE

Replace both left and right bearings. **NEVER** replace one and not the other.

1. Remove blade-side hex jam nut.
2. Remove pulley-side hex jam nut
3. Remove outside flange.
4. Remove blade and dowel pin. Store blade in an area free of dirt and debris where it will not be damaged.
5. Remove inside flange.
6. Remove the screws (4), flat washers (4) and lock washers (4) that secure the pillow block bearings (2) to the frame.
7. Remove blade spindle shaft and associated components from frame.

8. Place blade spindle (shaft) on a suitable workbench.
9. Remove blade-side key.
10. Loosen blade-side pillow block bearing set screw.
11. Slide blade side pillow block bearing off blade spindle shaft.
12. Remove the three retaining screws that secure the bushing to the pulley.
13. Remove pulley-side bushing.
14. Remove the two set screws that secure the pulley to the blade spindle shaft.
15. Remove pulley-side blade spindle shaft key.
16. Loosen pulley-side pillow block bearing set screw.
17. Slide pulley side pillow block bearing off blade spindle shaft.
18. Install new pillow block bearings (2) onto blade spindle shaft, reassemble in reverse order.

BATTERY MAINTENANCE

⚠ CAUTION

ALWAYS wear safety glasses or face mask, protective clothes, and rubber gloves when working with battery.

Mishandling of the battery shortens the service life of the battery and adds to maintenance cost. When handling the battery do the following:

1. Be careful not to let the battery electrolyte come in contact with your body or clothing.
2. Always wear eye protection and rubber gloves, since the battery contains sulfuric acid which burns skin and eats through clothing.
3. Always check the battery terminals periodically to ensure that they are in good condition.
4. Use wire brush or sand paper to clean the battery terminals.
5. Always check battery for cracks or any other damage. If white pattern appears inside the battery or paste has accumulated at the bottom, replace the battery.
6. If the pump will not be in operation for a long period of time, store in cool dry place and check the battery charge level every month to maintain the performance of the battery.
7. Check the battery regularly and make sure that each electrolyte level is to the bottom of the vent well (Figure 58). If necessary add only distilled water in a well-ventilated area.

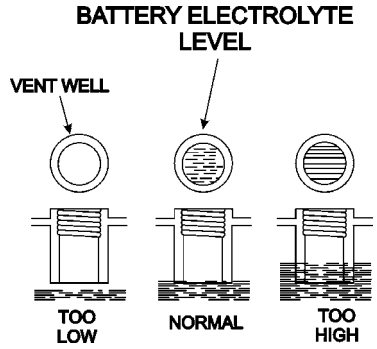
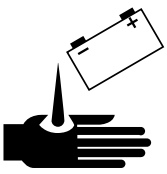


Figure 58. Battery Electrolyte Levels

⚠ WARNING



Electrolyte is an acid and must be handled with caution. Servicing instructions from the electrolyte manufacturer must **ALWAYS** be followed to ensure safety. Serious injury can result from careless handling and noncompliance to safety handling instructions.

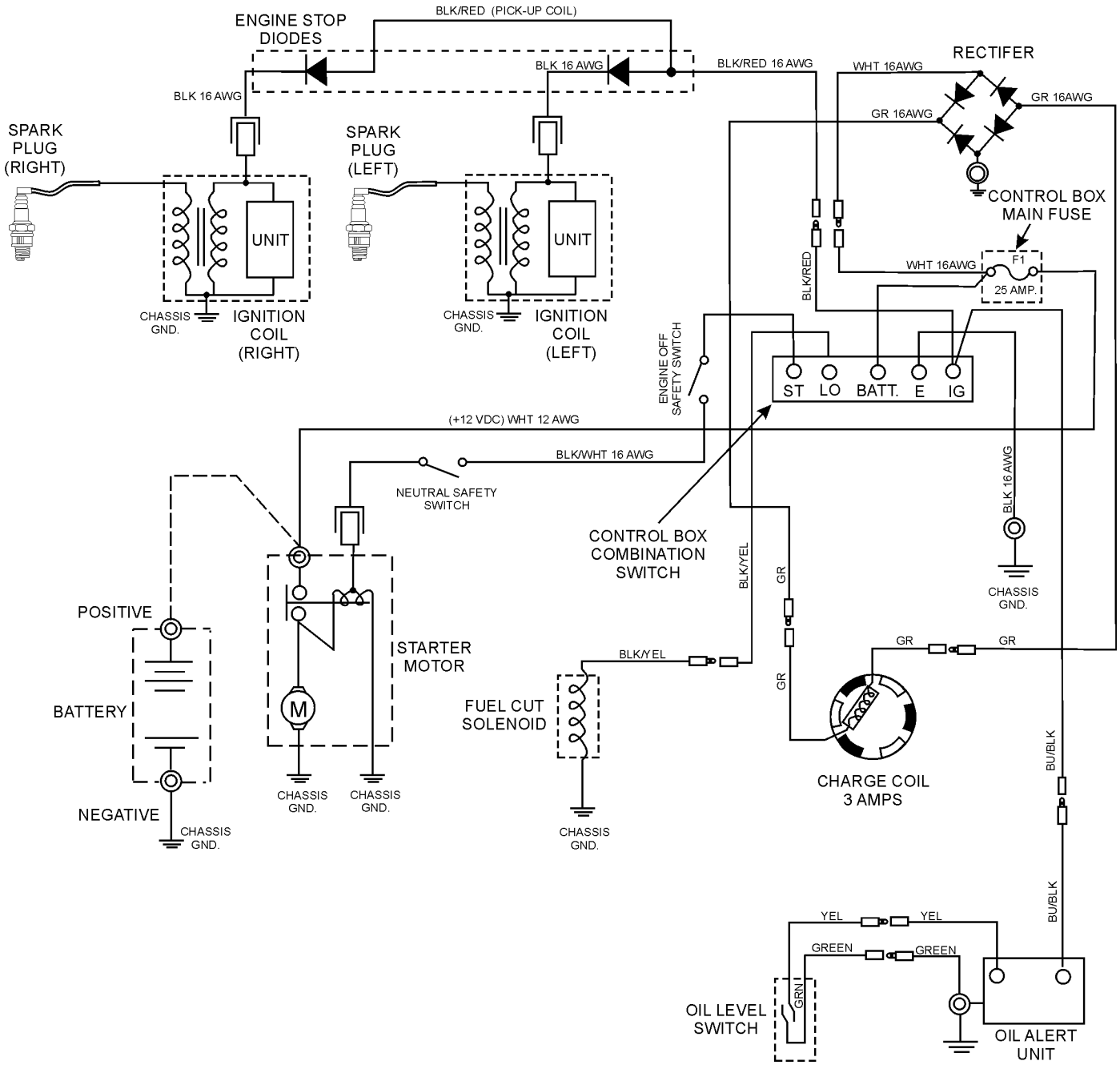
Overfilling the battery may cause the electrolyte to overflow resulting in corrosion to nearby components. Immediately wash off any spilled electrolyte (battery acid).

Additionally, when connecting the positive (+) cable to the battery's positive (+) terminal post, **DO NOT** allow contact of the wrench or any metallic part to come in contact with the battery's negative(-) terminal post. This may result in an electrical short circuit or an explosion.

LONG-TERM STORAGE

For storage of the saw for over 30 days, the following is required:

- Drain the fuel tank completely, or add STA-BIL to the fuel.
- Run the engine until the gasoline in the carburetor is completely consumed.
- Completely drain the oil from the crankcase and refill with fresh oil.
- Remove the spark plug. Pour 5 to 10 cc of SAE 30 oil into the cylinder. Turn the engine switch to the **START** position for a few seconds to distribute the oil. Reinstall the spark plug.
- Drain water from water tank and water lines.
- Clean all external parts of the saw with a cloth.
- Cover the saw and store in a clean, dry place.



COLOR CODE	
BLK	BLACK
WHT	WHITE
RED	RED
YEL	YELLOW
GRN	GREEN
GRAY	GRAY
BU	BLUE

COMBINATION SWITCH CONTINUITY

	IG	E	BAT	LO	ST
OFF	○—○				
ON			○—○		
ST			○—○	○—○	

Troubleshooting (Engine)		
Symptom	**Possible Problem**	**Solution**
Difficult to start, fuel is available, but no spark at spark plug.	Spark plug bridging?	Check gap, insulation or replace spark plug.
	Carbon deposit on spark plug?	Clean or replace spark plug.
	Short circuit due to deficient spark plug insulation?	Check spark plug insulation, replace if worn.
	Improper spark plug gap?	Set to proper gap.
	Fuel reaching carburetor?	Check fuel line.
	Water in fuel tank?	Flush or replace fuel tank.
	Fuel filter clogged?	Replace fuel filter.
	Stuck carburetor?	Check float mechanism.
	Spark plug is red?	Check transistor ignition unit.
	Spark plug is bluish white?	If insufficient compression, repair or replace engine. If injected air leaking, correct leak. If carburetor jets clogged, clean carburetor.
	No spark present at tip of spark plug?	Check transistor ignition unit is broken, and replace defective unit. Check if voltage cord cracked or broken and replace. Check if spark plug if fouled and replace.
	No oil?	Add oil as required.
	Oil pressure alarm lamp blinks upon starting? (if applicable)	Check automatic shutdown circuit, "oil sensor". (if applicable)
Difficult to start, fuel is available, and spark is present at the spark plug.	ON/OFF switch is shorted?	Check switch wiring, replace switch.
	Ignition coil defective?	Replace ignition coil.
	Improper spark gap, points dirty?	Set correct spark gap and clean points.
	Condenser insulation worn or short circuiting?	Replace condenser.
	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.
Difficult to start, fuel is available, spark is present and compression is normal.	Wrong fuel type?	Flush fuel system, and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
	Choke open?	Close choke.
Difficult to start, fuel is available, spark is present and compression is low.	Suction/exhaust valve stuck or protruded?	Reseat valves.
	Piston ring and/or cylinder worn?	Replace piston rings and/or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
No fuel present at carburetor.	No fuel in fuel tank?	Fill with correct type of fuel.
	Fuel cock does not open properly?	Apply lubricant to loosen fuel cock lever, replace if necessary.
	Fuel filter/lines clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
	Air in fuel line?	Bleed fuel line.

Troubleshooting (Engine) - continued		
Symptom	**Possible Problem**	**Solution**
Weak in power, compression is proper and does not misfire.	Air cleaner dirty?	Clean or replace air cleaner.
	Improper level in carburetor?	Check float adjustment, rebuild carburetor.
	Defective spark plug?	Clean or replace spark plug.
	Improper spark plug?	Set to proper gap.
Weak in power, compression is proper but misfires.	Water in fuel system?	Flush fuel system and replace with correct type of fuel.
	Dirty spark plug?	Clean or replace spark plug.
	Ignition coil defective?	Replace ignition coil.
Engine overheats.	Spark plug heat value incorrect?	Replace with correct type of spark plug.
	Wrong type of fuel?	Replace with correct type of fuel.
	Cooling fins dirty?	Clean cooling fins.
	Intake air restricted?	Clear intake of dirt and debris. Replace air cleaner elements as necessary.
	Oil level too low or too high?	Adjust oil to proper level.
Rotational speed fluctuates.	Governor adjusted incorrectly?	Adjust governor.
	Governor spring defective?	Replace governor spring.
	Fuel flow restricted?	Check entire fuel system for leaks or clogs.
Recoil starter malfunctions. (if applicable)	Recoil mechanism clogged with dust and dirt?	Clean recoil assembly with soap and water.
	Spiral spring loose?	Replace spiral spring.
Starter malfunctions.	Loose, damaged wiring?	Ensure tight, clean connections on battery and starter.
	Battery insufficiently charged?	Recharge or replace battery.
	Starter damaged or internally shorted?	Replace starter.
Burns too much fuel.	Over-accumulation of exhaust products?	Check and clean valves. Check muffler and replace if necessary.
	Wrong spark plug?	Replace spark plug with manufacturer's suggested type.
Exhaust color is continuously "white".	Lubricating oil is wrong viscosity?	Replace lubricating oil with correct viscosity.
	Worn rings?	Replace rings.
Exhaust color is continuously "black".	Air cleaner clogged?	Clean or replace air cleaner.
	Choke valve set to incorrect position?	Adjust choke valve to correct position.
	Carburetor defective, seal on carburetor broken?	Replace carburetor or seal.
	Poor carburetor adjustment, engine runs too rich?	Adjust carburetor.
Will not start, no power with key "ON". (if applicable)	ON/OFF device not activated ON?	Turn on ON/OFF device.
	Battery disconnected or discharged?	Check cable connections. Charge or replace battery
	Ignition switch/wiring defective?	Replace ignition switch. Check wiring.

Troubleshooting (Blades)		
Symptom	**Possible Problem**	**Solution**
Blade slows or Stops cutting,still remains on blade.	Blade too hard for the material being cut?	Consult Dealer or Multiquip for correct blade. Try cutting very soft material (sandstone, silica brick, cinder block) to "Redress" the blade.
	Engine Torgue diminished because of loose V-Belts?	Tighten and/or replace V-Belts.
	Insufficent Engine power?	Check Throttle setting. Check Engine horespower.
	Improper direction of rotation?	Check that the blade is oriented and rotational arrow points are in a "Down-Cutting" direction.
	Blade is slipping on the blade shaft?	Check that the blade and flange pin are properly installed on the blade shaft.
Blade does not cut straight and/or true.	Blade being used on misaligned saw?	Check blade shaft bearings and alignment integrity.
	Blade is excessively hard for the material being cut?	Check specifications of the blade with the material being cut. Consult Dealer or Multiquip for information.
	Blade being used at improper RPM?	Ensure blade surface feet per minute speed (SFPM) is approximately 6,000.
	Blade improperly mounted on arbor shoulders and flanges?	Ensure blade is properly affixed on the blade shaft.
	Excessive force applied to blade while cutting?	Do not force the blade in the cut. Apply a slow, steady pace to sawing.
Blade discoloring, crackling and/or wearing excessively.	Blade too hard for the material being cut?	Consult Dealer or Multiquip for correct blade. Try cutting very soft material (sandstone, silica brick, cinder block) to"Redress" the blade.
	Blade improperly mounted on arbor shoulders and flanges?	Ensure blade is properly affixed on the blade shaft. Ensure the blade flanges are clean and free of debris.
	Blade not receiving enough cooling water?	Ensure proper flow and volume of water is provided for blades.
	Abor hole out of round?	Ensure blade is properly affixed on the blade shaft.
	Incorrect blade chosen for material being cut?	Check specifications of the blade with the material being cut. Consult Dealer or Multiquip for information.
	Excessive force applied to blade while cutting?	Do not force the blade in the cut. Apply a slow, steady pace to sawing.

OPERATION MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL NUMBER ON-HAND WHEN CALLING

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Carson, CA 90746
Contact: mq@multiquip.com

Tel. (800) 421-1244
Fax (800) 537-3927

MQ Parts Department

800-427-1244
310-537-3700

Fax: 800-672-7877
Fax: 310-637-3284

Service Department

800-421-1244
310-537-3700

Fax: 310-537-4259

Warranty Department

800-421-1244
310-537-3700

Fax: 310-943-2249

Technical Assistance

800-478-1244

Fax: 310-943-2238

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